ORDER NO. VRD8607124

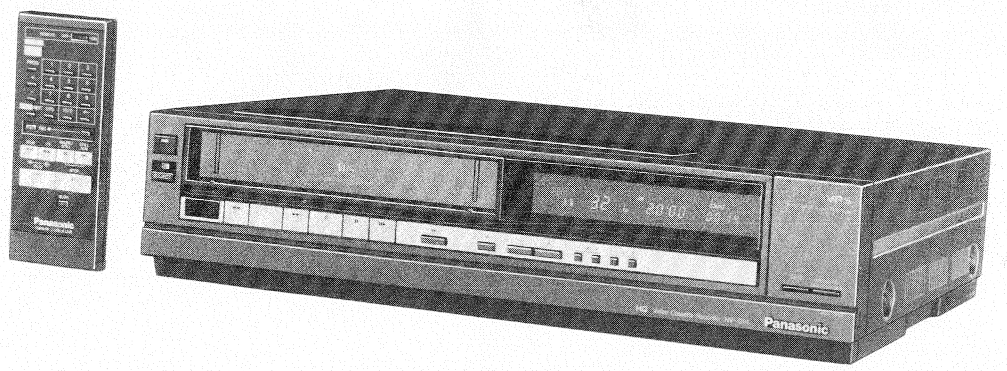
Service Manual

General Description
Adjustment Procedures
Block/Schematic Diagrams
Exploded Views/Parts List

Panasonic VHS PAL HQ

Video Cassette Recorder

NV-G14EG



ITEM	SPECIFICATION
POWER	SOURCE: 220 V AC 50/60 Hz
	CONSUMPTION: 35 watts
RECORDING SYSTEM	2 rotary heads, helical scanning system
	PAL, MESECAM
TV TUNER SYSTEM	VHF: CH E2～CH S20 (PAL/SECAM B) 75Ω unbalanced UHF: CH 21～CH 69 (PAL/SECAM G) 75Ω unbalanced
RF OUT SYSTEM	UHF: CH 36±4 73^{+2}_{-3}dBμ 75Ω unbalanced PAL/SECAM G
VIDEO	HEADS: 3 rotary heads 1 pair for recording and play back (L-R heads) 1 pc . of head for video trick play with L' head (field still and field slow)
	INPUT: VIDEO IN CONNECTOR (BNC) 1.0 Vp-p, 75Ω terminated EURO AV CONNECTOR (21 pin) 1.0 Vp-p, 75Ω terminated
	OUTPUT: EURO AV CONNECTOR (21 pin) 1.0 Vp-p, 75Ω terminated

ITEM	SPECIFICATION
AUDIO	HEAD: 1 Stationary head
	INPUT: AUDIO IN Connector (Phono type) More than −10 dBV (316 mV), 50 kΩ EURO AV CONNECTOR (21 pin) More than −10 dBV (316 mV), 10 kΩ
	OUTPUT: EURO AV CONNECTOR (21 pin) −6 dBV (500 mV), less than 1 kΩ
TAPE FORMAT	VHS Cassette tape (Tape width 12.7 mm)
TAPE SPEED	23.39 mm/s Record/Playback Time 4 hours with 240 min. type tape FF/REW Time 5.5 min. with 180 min. type tape
DIMENSIONS	430(W)×99(H)×365(D) mm
WEIGHT	8.2 kg
STANDARD ACCESSORIES	1 pc. DIN-RF Cable 1 pc. Wireless Remote Controller

Weight and dimensions shown are approximate.
Specifications are subject to change without notice.

Panasonic

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

INTRODUCTION

This service manual contains technical information which will allow service technicians to understand and service this model.
Section 1 presents you with some general information of features and controls, enabling you to become familiar with each function.
Section 2 contributes to your mechanical and electrical adjustment as well disassembly and replacement procedures.
In the case of very common information relating to other models like mechanical adjustments, please refer to each service manual.
Section 3 contains block diagrams which offers you information for checking and understanding each circuit. Schematic diagrams which give you detailed information such as waveforms, voltage data, function e.t.c...
Section 4 contains exploded views and parts list.
Please place orders using the parts list and not the drawing reference unmbers.
If the circuit is changed or modified, this information will be followed by supplementary service manual to be filed with original service manual.

CONTENTS

SECTION 1 1-1
GENERAL DESCRITION 1-1
1-1. FEATURES 1-1
1-2. CONTROL & COMPONENTS 1-2

SECTION 2 2-1
2-1. MECHANICAL ADJUSTMENT PROCEDURES 2-1
2-2. DISASSEMBLY METHOD 2-1
2-3. REPLACEMENT OF UPPER CYLINDER UNIT 2-3
2-4. REPLACEMENT OF AC CORD 2-4
2-5. ELECTRICAL ADJUSTMENT PROCEDURES 2-4

SECTION 3 3-1
BLOCK DIAGRAMS & SCHEMATIC DIAGRAMS 3-1
3-1. SYSTEM CONTROL BLOCK DIAGRAM 3-1
3-2. LUMINANCE & CHROMINANCE BLOCK DIAGRAM 3-2
3-3. SERVO BLOCK DIAGRAM 3-3
3-4. POWER SUPPLY SCHEMATIC DIAGRAM 3-4
3-5. POWER SUPPLY Section In Main Circuit Board 3-5
3-6. POWER TRANSFORMER CIRCUIT BOARD 3-5
3-7. SYSTEM CONTROL SCHEMATIC DIAGRAM 3-6
3-8. SYSTEM CONTROL Section In Main Circuit Board 3-7
3-9. SERVO SCHEMATIC DIAGRAM 3-8
3-10. SERVO Section In Main Circuit Board 3-9
3-11. SERVO PACK CIRCUIT BOARD 3-9
3-12. LUMINANCE & CHROMINANCE SCHEMATIC DIAGRAM 3-10
3-13. LUMINANCE & CHROMINANCE PACK SCHEMATIC DIAGRAM 3-10
3-14. LUMINANCE & CHROMINANCE Section In Main Circuit Board 3-11
3-15. LUMINANCE & CHROMINANCE PACK CIRCUIT BOARD 3-11
3-16. SECAM PACK CIRCUIT BOARD 3-11

3-17. HQ & REC AMP PACK CIRCUIT BOARD 3-11
3-18. INPUT SELECT PACK CIRCUIT BOARD 3-11
3-19. HEAD AMP PACK SCHEMATIC DIAGRAM 3-12
3-20. HEAD AMP PACK CIRCUIT BOARD 3-12
3-21. AUDIO PACK CIRCUIT BOARD 3-12
3-22. AUDIO Section In Main Circuit Board 3-12
3-23. AUDIO SCHEMATIC DIAGRAM 3-13
3-24. OPERATION SCHEMATIC DIAGRAM 3-14
3-25. OPERATION CIRCUIT BOARD 3-15
3-26. TIMER CIRCUIT BOARD & SUB TIMER CIRCUIT BOARD 3-16
3-27. TIMER & SUB TIMER SCHEMATIC DIAGRAM 3-17
3-28. TUNER & TV DEMODULATOR SCHEMATIC DIAGRAM 3-18
3-29. TUNER & TV DEMODULATOR Section In Main Circuit Board 3-19
3-30. TV DEMODULATOR PACK CIRCUIT BOARD 3-19
3-31. VPS SCHEMATIC DIAGRAM 3-20
3-32. VPS CIRCUIT BOARD 3-20
3-33. MAIN CIRCUIT BOARD 3-21
3-34. RF CONVERTER SCHEMATIC DIAGRAM 3-22
3-35. RF CONVERTER CIRCUIT BOARD 3-22
3-36. REMOTE CONTROLLER SCHEMATIC DIAGRAM 3-22
3-37. REMOTE CONTROLLER CIRCUIT BOARD 3-22
3-38. CIRCUIT BOARD LAYOUT 3-22
3-39. INTERCONNECTION SCHEMATIC DIAGRAM 3-23
3-40. ICs & TRANSISTORs INFORMATION 3-24

SECTION 4 4-1
EXPLODED VIEWS & PARTS LIST 4-1
  4-1. EXPLODED VIEW 4-1
    1. TRANSPORT SECTION 4-1
    2. MOVING MECHANISM SECTION 4-2
    3. CHASSIS PARTS SECTION 4-3
    4. CASSETTE UP MECHANISM SECTION 4-4
    5. CASING PARTS SECTION 4-5
    6. PACKING PARTS SECTION 4-6
    7. REMOTE CONTROL UNIT 4-7
MECHANICAL REPLACEMENT PARTS LIST
ELECTRICAL REPLACEMENT PARTS LIST

REMARKS (NV-G14EG West Germany model only)

1. It is possible to receive, record and play back colour broadcasts from East Germany (DDR) on this video recorder.
2. When a video tape that was recorded with a colour TV broadcast from East Germany on this VTR is played back on a SECAM (France) or on a PAL VTR, the picture may be in black and white.
3. When a video tape recorded on a SECAM (France) VTR or a SECAM (France) prerecorded video tape is played back on this VTR, the picture is in black and white.

Technical Information

Subject: How to make easier servicing

We are pleased to inform you how to make easier servicing of NV-G14.

1. How to make easier servicing of a packed circuit

In the case of checking for such a packed circuit as Luminance and Chrominance Pack, Audio Pack, TV Demodulator Pack and so on, you may install them on the other side of the circuit board; the foil side.
At that time, remove the packed circuit board carefully not to damage anything and reinstall on the foil side keeping the relation of each connection correctly.

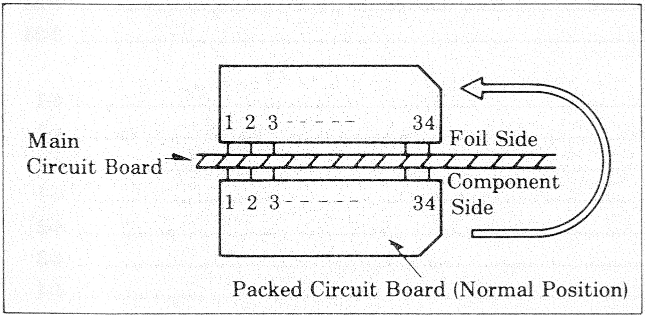

Main Circuit Board
1 2 3 ----- 34
Foil Side
Component Side
1 2 3 ----- 34
Packed Circuit Board (Normal Position)

Fig. 1

2. How to remove the Main Circuit Board

In the case of checking for the servo circuit, you can remove the main circuit board from its frame.
At that time unlock the 2 hinges and lift up paying attention not to touch any other portion.

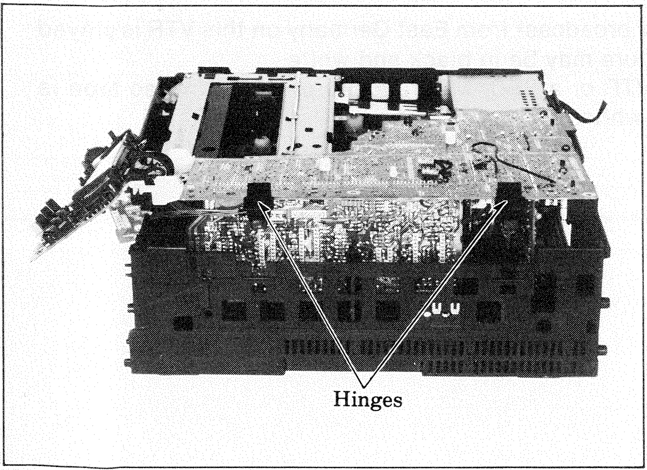


Fig. 2

SECTION 1

GENERAL DESCRIPTION

1-1. FEATURES

1. Video programme System (VPS)

The Video Programme System is an extremely convenient system which assures that the TV programmes you have programmed for timer recording will be recorded exactly from beginning to end, even if the actual broadcasting time is different from the scheduled time.

2. HQ (High Quality) Picture System

Video recorders carrying the HQ symbol mark feature the new VHS High Quality Picture System. This system assures complete compatibility with VTRs that use the conventional VHS system.

3. Auto Operation

This VTR automatically turns itself on when a video cassette is inserted even if it was turned off. When the tab of the inserted cassette is broken out, playback will start automatically. Also, even if the VTR is off, when the Eject Button is pressed, it automatically turns itself to eject the cassette tape and turns itself off again.
When a video cassette tape with a broken out tab is inserted and the VTR is switched over to recording, OTR and timer recording, the cassette tape will be automatically ejected.
When the tape reaches its end (except during OTR and timer recording), it will automatically rewind to the beginning.

4. Super Still, Super Still Advance and Super Fine Slow Playback

Super Still, Super Still Advance and Super Fine Slow Playback are possible with superb picture quality free from noise and jitter.

5. Super OTR Function (One-Touch Timer Recording)

This convenient function makes it possible to easily programme the VTR for recording of TV programmes with immediate start or with start within 24 hours and with the starting time and ending time precisely to the minute, and the VTR will automatically turn itself off when the recording ends.

6. 1-Mouth Calendar Timer

The clock/timer of the NV-G14 is programmed with the calendar up to the end of 1999. Therefore it knows exactly what day of the week it is on any given date. Programming of as many as 8 timer recordings is possible up to one month in advance.
In addition, easy programming of the timer recordings is possible both on the VTR itself and via the remote control unit.

7. Reception of up to 32 TV Stations

The built-in tuner is this video recorder allows pretuning of 32 TV stations.

8. Slim Design and Front Loading System

This highly functional design allows loading the video cassette from the front, thus minimizing the space required for the placement.

9. Multi-Function Display

Whenever an operation button is pressed, the activated function is immediately indicated on this easy-to-see display. It shows you at a glance, in what operation mode the VTR is functioning.

10. Infra-red Remote Controller

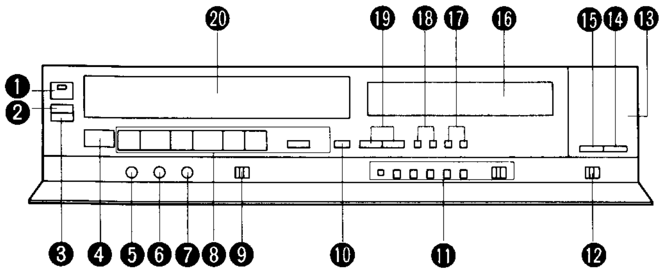
The Infre-red Remote Controller unit allows operation of various functions from the comfort of your favourite viewing position.

11. Picture Sharpness Control

With this control, the contours of the playback picture can be made sharper or softer.

1-2. CONTROLS AND COMPONENTS

TOP AND FRONT



1. VTR ON/OFF SWITCH

2. CASSETTE-IN INDICATOR

3. EJECT BUTTON

Push to this button to remove the cassette.

4. INFRA-RED REMOTE CONTROL RECEIVER

Receives the signal from the Infra-red Remote Controller.

5. TRACKING CONTROL

Adjust the Tracking Control on the VTR if the image is partially obscured by bands of noise.

6. SLOW TRACKING CONTROL

* When noise bars appear during Super Still, Super Still Advance or Super Fine Slow playback, switch over to slow playback and adjust the Slow Tracking Control to reduce the noise bars.

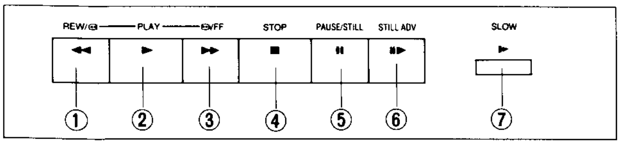
* It may not be possible to eliminate the noise bars completely.

7. PICTURE SHARPNESS CONTROL

* The picture sharpness control enables the playback picture to be adjusted so that its outlines are made sharper or softer.

* It has no effect when recording.

8. TAPE RUNNING CONTROLS



1. Rewind/Review Button
2. Play Button
3. Fast Forward/Cue Button
4. Stop Button
5. Pause/Still Button
6. Still Advance Button
7. Slow Button

9. PICTURE DETAIL ENHANCER SELECTOR

For recording of TV programmes, this switch can be set to the HIGH position to enhance overall picture crispness and detail as well as to improve the legibility of characters and figures. When the reception signal is weak and when recording (dubbing) from another VTR, this switch must be set to the NORMAL position. The position of this selector has no influence on the playback.

10. RECORD BUTTON

11. TIMER CONTROLS

12. INPUT SIGNAL SELECTOR

For selecting the input signal to be recorded.

13. TUNER SET-UP CONTROLS

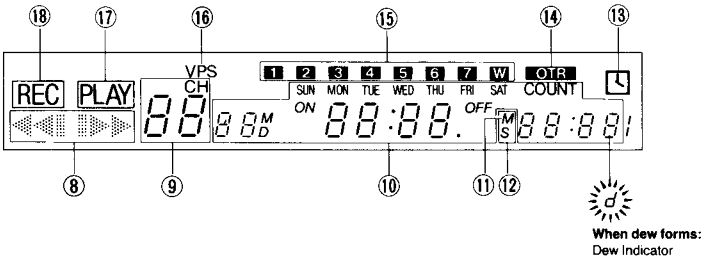
For tuning any broadcast channnel in your ares.

14. MEMORY / SEARCH LOCK BUTTON

When this button is pressed once, the Memory Indicator "M" will light up, and when it is pressed one more time, the Search Lock Indicator "S" will appear instead. When it is pressed a third time the Search Lock Indicator "S" will disappear.

15. RESET BUTTON

16. MULTI-FUNCTION DISPLAY



8. Tape Running Display
9. Channel Display
10. Clock/tape Counter Display
11. Memory Indicators
12. Search Lock Indicator
13. Timer Recording Indicator
14. OTR Indicator
15. Timer Programme Numbers
16. VPS Indicator
17. Playback Indicator
18. Recording Indicator

17. OTR OFF BUTTONS

Push these buttons to set the OTR ending time.

18. OTR ON BUTTONS

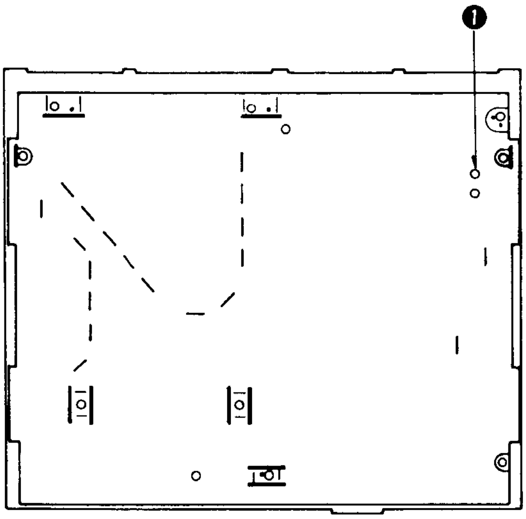
Push these buttons to set the OTR starting time.

19. CHANNEL SELECTION UP AND DOWN BOTTON

Push the desired channel selector buttons to select the channel you wish to record.

20. CASSETTE COMPARTMENT

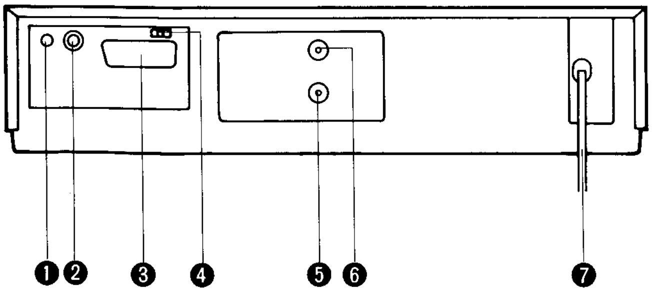
BOTTOM



1. V-LOCK

If a vertical jitter appears on the TV monitor in Still, Still-Advance or Slow mode, adjust the V-Lock control at the best position so that the picture can be stabilized.
Once you adjust this control, no more adjustment is required unless you change the connected TV receiver.

REAR



1. AUDIO INPUT SOCKET

For connecting an audio cable of a video camera, a component audio system or another VTR.

2. VIDEO INPUT SOCKET

For connecting the video cable of a video camera or an output video signal of another VTR.

3. EURO AV SOCKET

Connect the EURO AV SOCKET on the VTR to the AV socket on the TV set.
The EURO AV Socket allows recording and playback of picture and sound. This connection can be used for TV sets which are also equipped with an AV Socket. Via this socket, TV programmes can be recorded, too.
Such a connection improves the picture and sound quality during playback.

4. COLOUR MODE / TEST SIGNAL SWITCH

In the Test position, a black and white test pattern is generated, which allows easy tuning of your TV set to the video playback channel of the VTR. To record colour TV programme or to playback a colour tape, set the switch to "COLOUR" position.

5. RF INPUT SOCKET

Connect the extenal aerial to the RF Input Socket on the VTR.

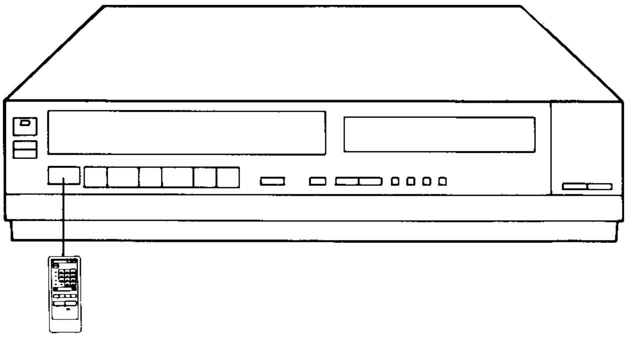
6. RF OUTPUT SOCKET

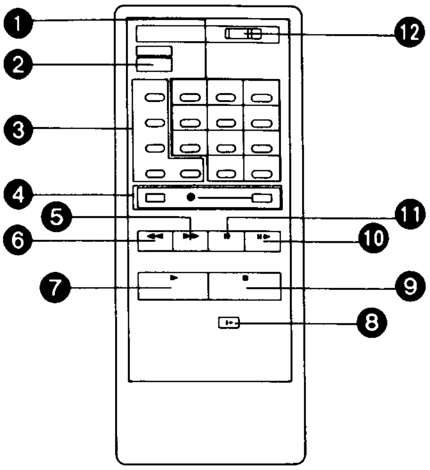
For connection to the antenna terminal (COAXIAL type) of TV with the DIN-DIN coaxial cable supplied with the unit.

7. AC CORD

Connect the AC Cord of the VTR to the mains outlet.

INFRA-RED REMOTE CONTROLLER





1. Programme Position (Channel Selector Button

select channel	press button
1–9	1 – 9 respective channel
10	10/0
20	-/-- → 2 → 10/0
11–32 for example 32	-/-- → 3 → 2

If more than 5 seconds pass between the first, second and third push, the channel will not be changed normally.

2. VTR On/Off Switch

For turning the VTR on and off.

3. Timer Recording Buttons

These buttons are use for programming timer recordings.

4. Record Buttons (●)

To start recording, press the both buttons simultaneously.

5. Fast Forward ▶▶/Cue ⏩ Button

When this button is kept pressed during playback, the VTR changes over to the Cue playback mode.

6. Rewind ◀◀/Review ⏪ Button

When this button is kept pressed during playback, the VTR changes over to the Review playback mode.

7. Play Button (▶)

8. Slow Button (▮▶)

Press the Slow Button for slow-motion playback at 1/8 of normal speed.
Note:
If the VTR is left in the slow playback mode for more than 10 minutes, the VTR will automatically switch over to the stop mode, to protect the tape and the video heads.
* Adjust the Slow Tracking Control if necessary.

9. Stop Button (■)

10. Still Advance Button (▮▶)

11. Pause/Still Button (▮▮)

12. Remote Controller On/Off Switch

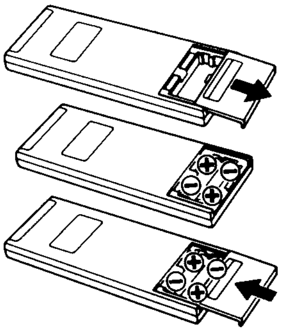
Power Source for the Infra-red Remote Controller

The Infra-red Remote Controller is powered by two IEC "R03" size batteries. The life of the batteries is about one year, however, it depends on the frequency of use.
Inspect and if necessary, replace the batteries once a year.

CAUTION FOR BATTERY REPLACEMENT

* Load the new batteries with their polarities (+ and –) aligned correctly.
* Do not apply heat to batteries, or internal short-circuit may occur.
* If you do not intend to use the Remote Controller for a long period of time, remove the batteries and store them in a cool and dry place.
* Remove spent batteries immediately and dispose of them.
* Do not use and old and a new batteries together. (Also never use an alkaline battery with a manganese battery.)

Load the batteries as follows:



1. Remove the battery compartment lid.

2. Place two batteries in the battery compartment as indicated inside the battery compartment.

3. Replace the lid.

Note:
* The infra-red beam should be transmitted directly at the Infra-red Remote Control Receiver on the front of the VTR.
* Direct sunlight may interfere with the beam.
* The lightsensing angle of the Infra-red Remote Control Receiver window in the VTR is about 40degrees.
* The unit should be used within a range of about 7 meters from the front of the VTR.

SECTION 2

ADJUSTMENT PROCEDURES

2-1. MECHANICAL ADJUSTMENT PROCEDURES

The Mechanical Chassis of these models NV-G14 is similar to the D-1 Mechanical Chassis. Therefore please refer to the Service Manual D-1 Chassis (Order No. VRD-8310-490), except the confirmation and adjustment as shown below.

2-1-1. CONFIRMATION OF PRESSING OF PRESSURE ROLLER

* Equipment Required:
Fan-Type Tension Gauge (VFK66)

* Specification: 1350~1950g

Note:
Procedures are the same as the Service Manual D-1 chassis item 1-1.
Please refer to the Service Manual D-1 Chassis (Order No. VRD-8310-490).

2-2. DISASSEMBLY METHOD

2-2-1. DISASSEMBLY FLOWCHART

This flowchart indicates disassembly items of the cabinet parts and C.B.A. in order to find the items necessary for servicing.
When reassembling, perform the steps in the reverse order.

Note:
When removing the Front Panel, take with care to avoide any breaking the locking portions of Panel.

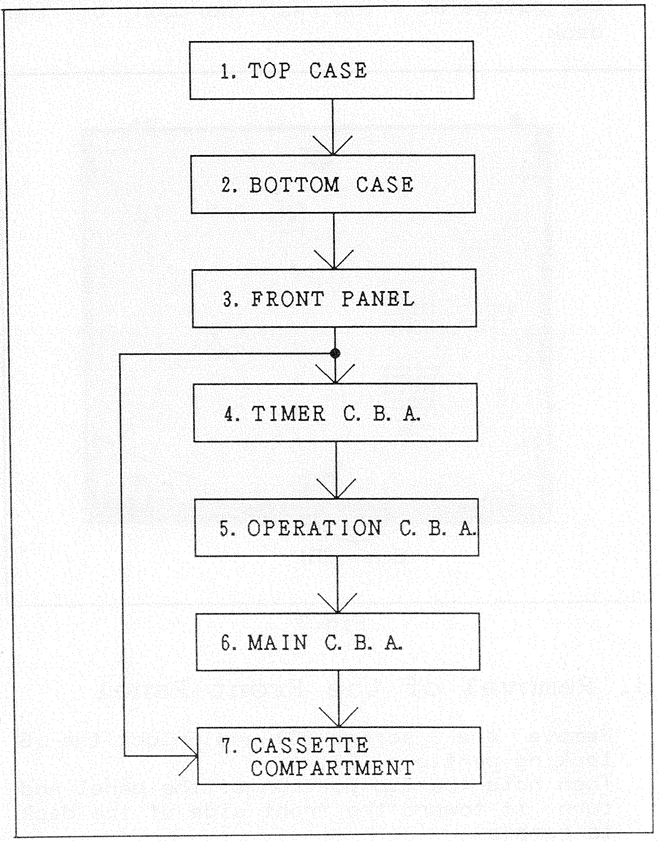


Fig.1

2-2-2. DETAIL OF DISASSEMBLY METHOD

1. Removal of the Top Case

Remove the 4 screws (A). Then carefully lift the rear of the case to remove.

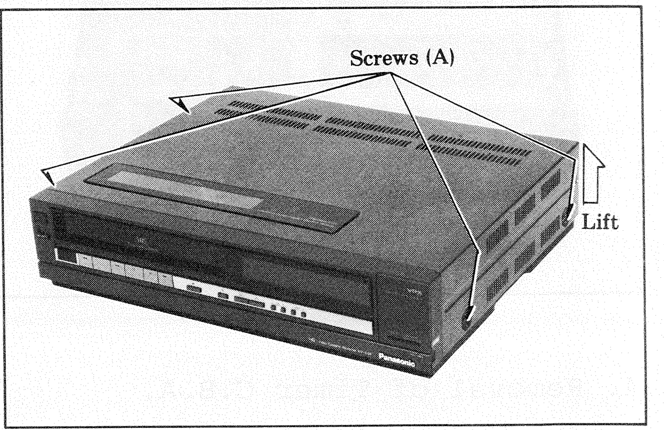


Fig.2

2. Removal of the Bottom Plate

Place the deck upside down so the bottom side face upward.
Then remove the 8 screws (B).

Note:
Place the cushion under the deck to avoide any damage of the rear portion of the deck.

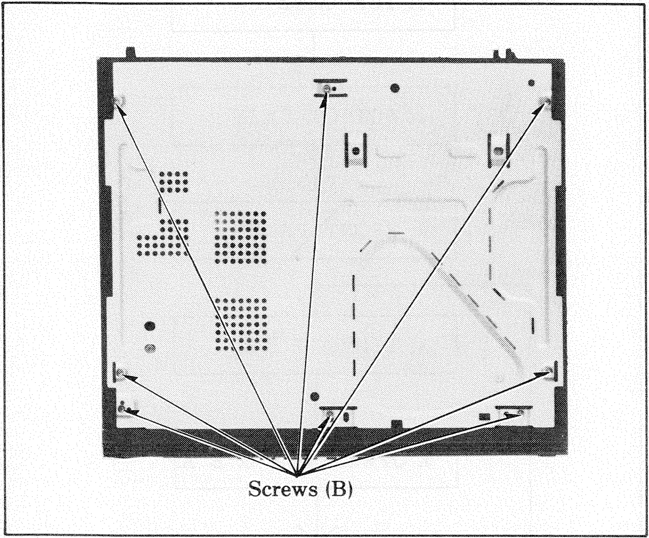


Fig.3

3. Removal of the Front Panel

Remove the 3 screws (C) and unlock the 6 locking portions (D).
Then hold the top portion of the panel and turn it toward the front side of the deck to remove.

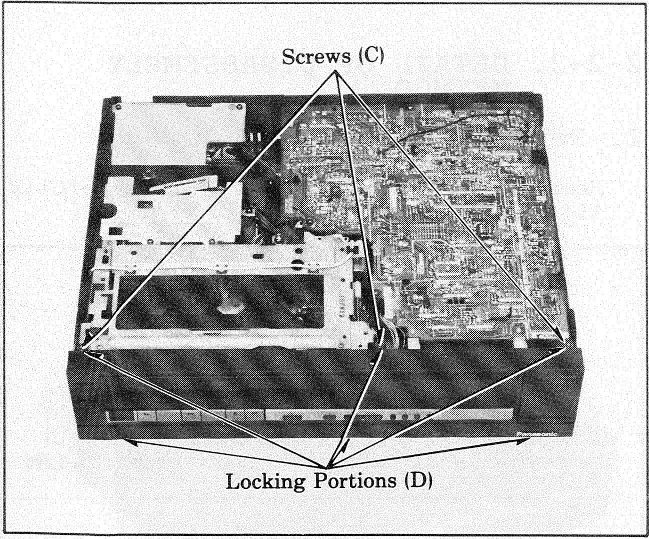

Screws (C)
Locking Portions (D)

Fig.4

4. Removal of Timer C.B.A.

Remove the 3 screws (E) and unlock the 2 locking portions (F).

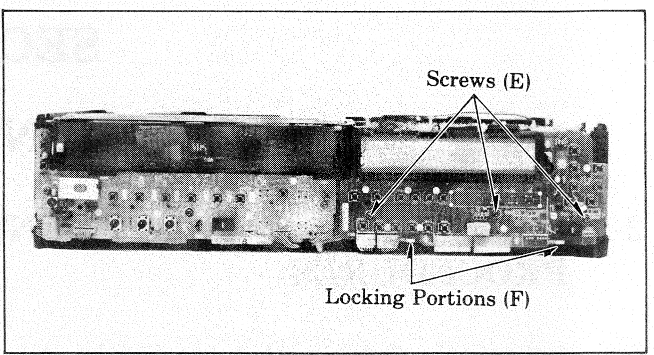

Screws (E)
Locking Portions (F)

Fig.5

5. Removal of Operation C.B.A.

Remove the 3 screws (G) and unlock 3 locking portions (H).

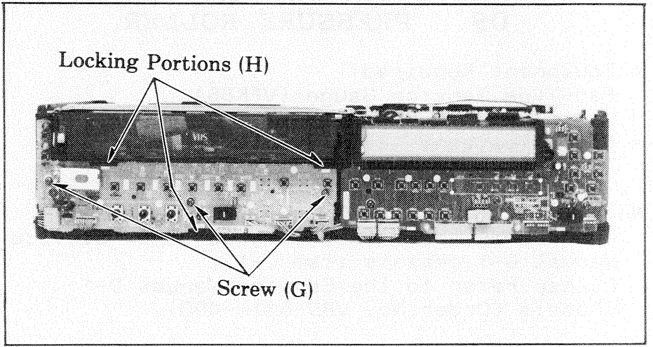

Locking Portions (H)
Screw (G)

Fig.6

6. Removal of Main C.B.A.

Remove the 6 screws (I) and disconnect the connector P1102.

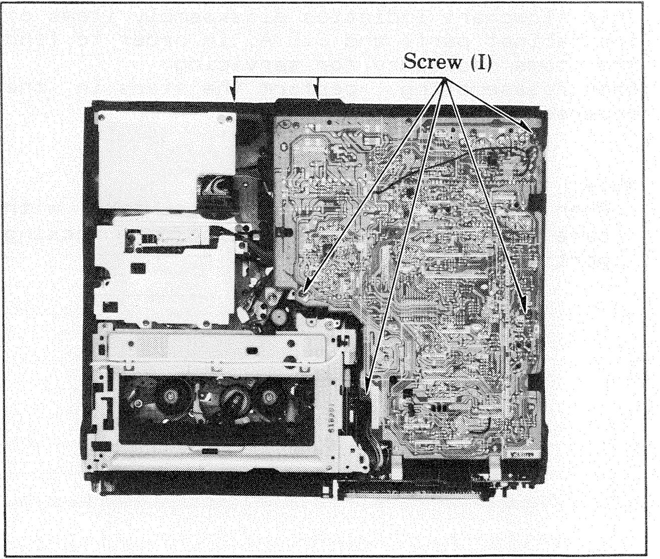


Fig.7

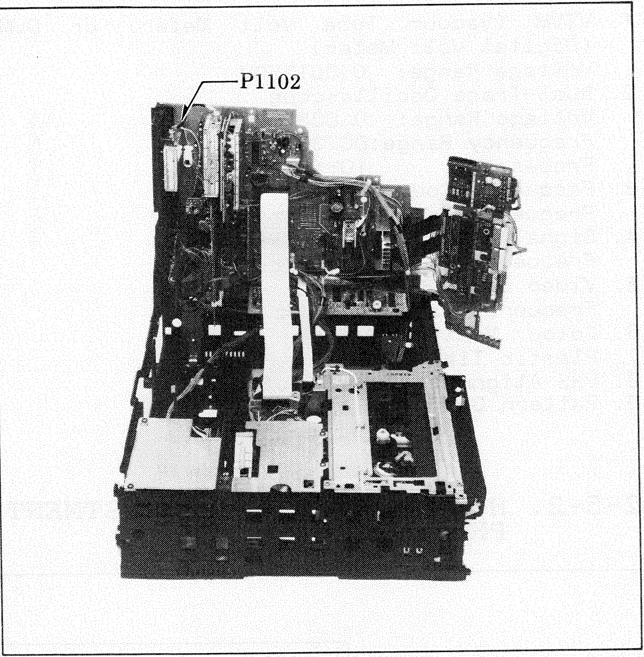


Fig.8

Then open the Main C.B.A. with Timer C.B.A. and Operation C.B.A.

7. Removal of the Cassette Compartment

Remove the 2 screws (J) and disconnect the connector P1510 from the Front Loading C.B.

Then carefully pull out the Cassette Compartment.

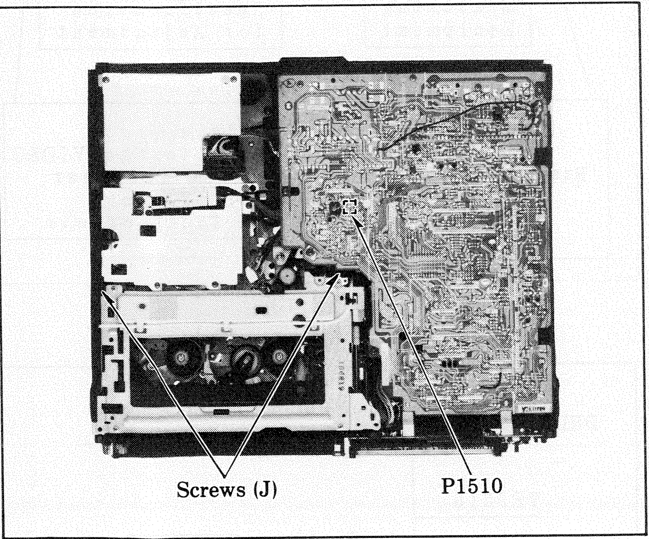


Fig.9

2-3. REPLACEMENT OF UPPER CYLINDER UNIT

Be sure to observe the following procedures when replacing the Upper Cylinder Unit.

1. Removing the Upper Cylinder Unit

First, remove two screws as shown in Fig.10.

Then, unsolder 8 soldered portions indicated by arrows, on the C.Board and finally remove the Upper Cylinder Unit by lifting it upward.

Note:

Soldered portion can be easily removed by using solder sucking wire, etc.

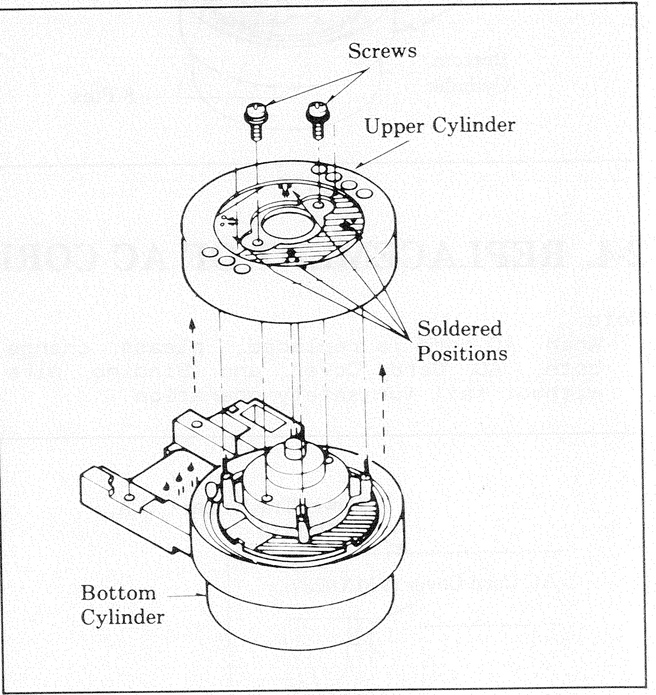


Fig.10

2. Reinstalling the Upper Cylinder Unit

The Upper Cylinder Unit can be reinstalled by reversing the removal procedure. However, when reinstalling, be extremely careful so that both the white and green portions of the C.Board on the Upper Cylinder Unit will correctly match the white and green portions of the C.Board on Bottom Cylinder as shown in Fig.11.

Note:

If the Upper Cylinder unit is reversely installed, no colour would appear when playing back a pre-recorded tape.

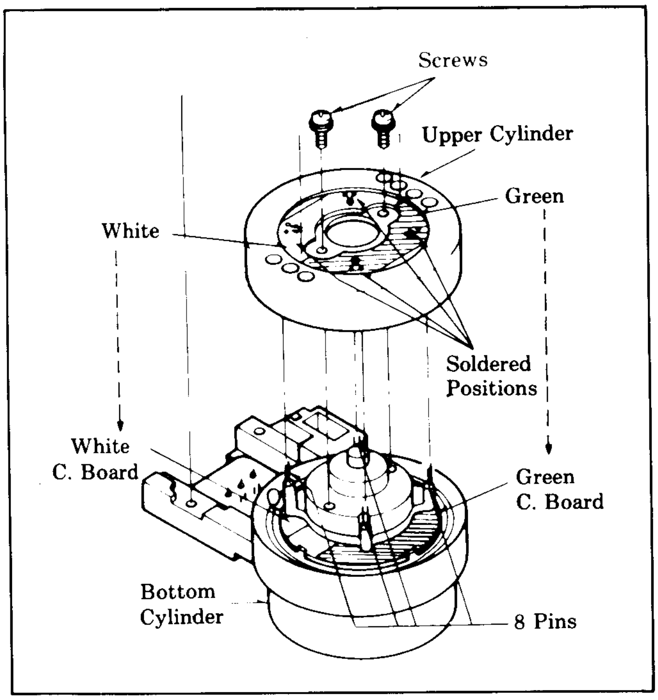

Screws
Upper Cylinder
Green
White
Soldered Positions
White C. Board
Green C. Board
Bottom Cylinder
8 Pins

Fig.11

2-4. REPLACEMENT OF AC CORD

Note:

When AC cord is replaced, please change both AC Cord Cover and Binding Wire without fail for safety operation.

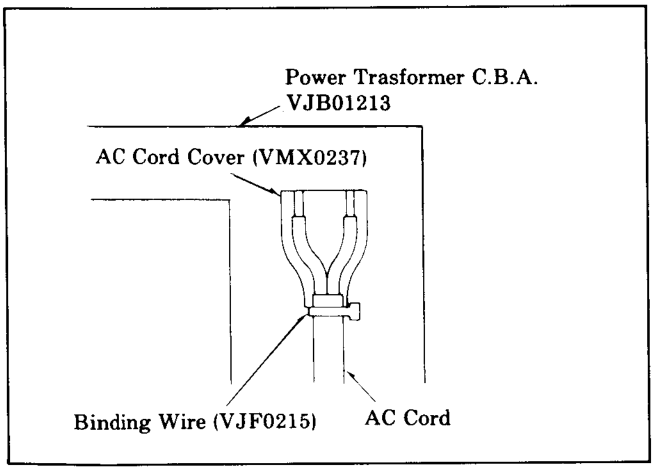

Power Trasformer C.B.A.
VJB01213
AC Cord Cover (VMX0237)
Binding Wire (VJF0215)
AC Cord

Fig.12

2-5. ELECTRICAL ADJUSTMENT PROCEDURES

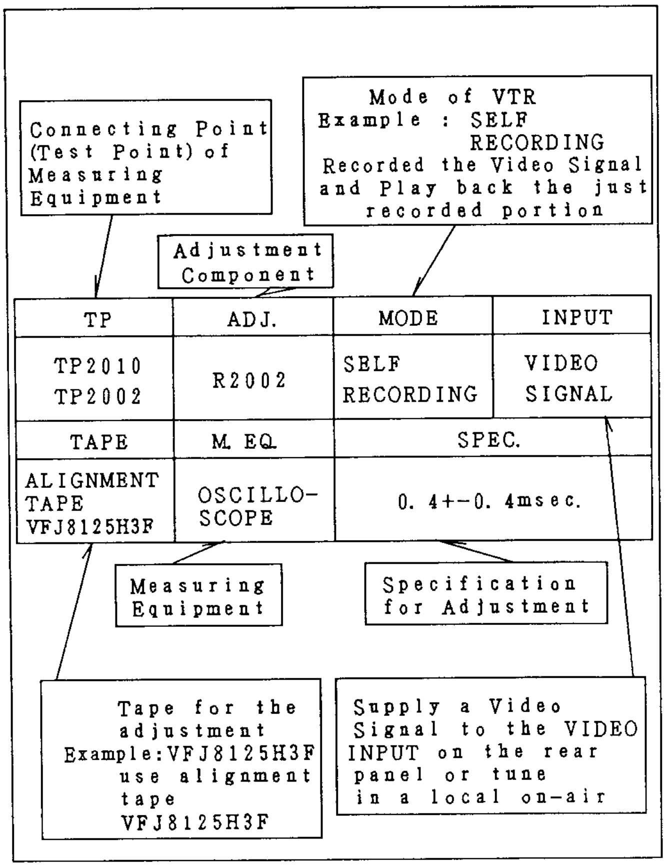
This section provides complete electrical adjustment procedures which may be required for electronic circuits of VHS Video Cassette Recorder NV-G14.

2-5-1. TEST EQUIPMENTS

To perform the electrical adjustments completely, following equipments are required.

1. VTVM (Vacuum Tube Volt Meter) or DVM (Digital Volt Meter)
   Voltage Range: 0.001~50V
2. Dual-Trace Oscilloscope
   Voltage Range: 0.005~50V/div.
   Frequency Range:DC~30MHz
   Probes: 10:1 or 1:1
3. Frequency Counter
   Frequency Range:0~10MHz
4. Signal Generator (Sinewave)
   Frequency Range:0~10MHz
5. Video Sweep Generator
   Frequency Range:0~10MHz
6. Colour Monitor TV
7. Plastic Tip Driver
8. VHS Alignment Tape (VFJ8125H3F)
9. Pattern Generator

2-5-2. HOW TO READ THE ADJUSTMENT PROCEDURES


Connecting Point (Test Point) of Measuring Equipment
Mode of VTR
Example : SELF RECORDING
Recorded the Video Signal and Play back the just recorded portion
Adjustment Component
Measuring Equipment
Specification for Adjustment
Tape for the adjustment
Example:VFJ8125H3F use alignment tape VFJ8125H3F
Supply a Video Signal to the VIDEO INPUT on the rear panel or tune in a local on-air

TP	ADJ.	MODE	INPUT
TP2010 TP2002	R2002	SELF RECORDING	VIDEO SIGNAL
TAPE	**M. EQ.**	**SPEC.**	
ALIGNMENT TAPE VFJ8125H3F	OSCILLO-SCOPE	0. 4+-0. 4msec.	

Fig.13

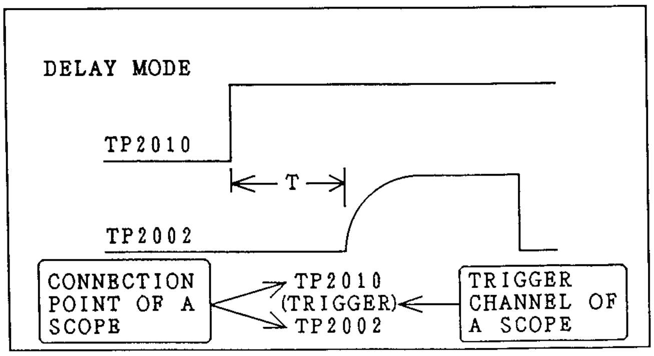

DELAY MODE
TP2010
T
TP2002
CONNECTION POINT OF A SCOPE
TP2010 (TRIGGER)
TP2002
TRIGGER CHANNEL OF A SCOPE

Fig.14

SERVO SECTION

2-5-3. PG SHIFTER ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3002 TP2001	VR2001	PLAY	
TAPE	M. EQ.	SPEC.	
ALIGNMENT TAPE VFJ8125H3F	OSCILLO-SCOPE	6.5+-0.5H	

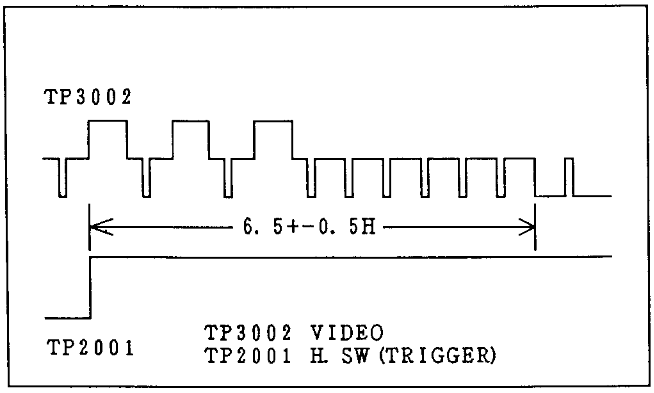

TP3002
6.5+-0.5H
TP2001
TP3002 VIDEO
TP2001 H. SW (TRIGGER)

Fig.15

2-5-4. TRACKING FIX ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP2001 TP2002	VR2002	SELF RECORDING	VIDEO SIGNAL
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO-SCOPE	T=0.4+-0.4msec.	

1. TRACKING VR is centre fix position.
2. Playback the just recorded portion.
3. Adjust VR2002 so that the period of "T" becomes 0.4 +- 0.4msec. as shown below.

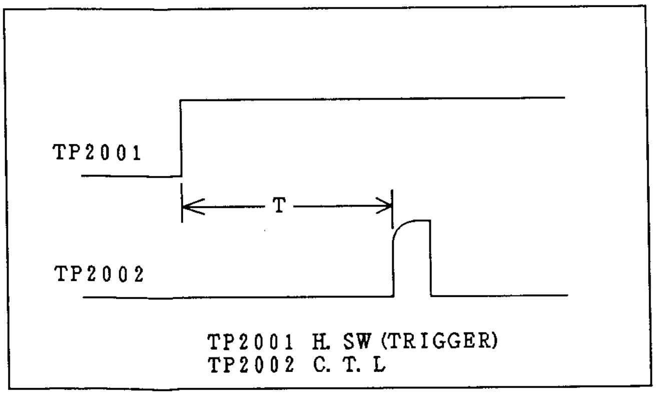

TP2001
T
TP2002
TP2001 H. SW (TRIGGER)
TP2002 C. T. L

Fig.16

2-5-5. SLOW TRACKING FIX ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP2020 TP2002	VR2011	SELF RECORDING	VIDEO SIGNAL
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO-SCOPE	T=32.5+-2.5msec.	

1. SLOW TRACKING VR is in centre position.
2. Playback the just recorded portion.
3. Place the deck in SLOW mode.
4. Adjust VR2011 so that the period of "T" becomes 32.5 +- 2.5msec. as shown below.

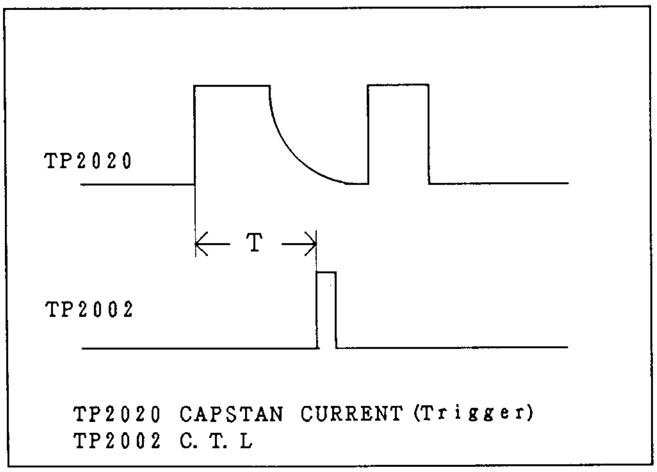

TP2020
T
TP2002
TP2020 CAPSTAN CURRENT (Trigger)
TP2002 C. T. L

Fig.17

2-5-6. ARTIFICIAL V-SYNC ADJUSTMENT

TP	ADJ.	MODE	INPUT
	VR2003	SELF RECORDING	VIDEO SIGNAL
TAPE	M. EQ.	SPEC.	
BLANK TAPE	TV MONITOR		

1. Playback the just recorded portion and place the deck in STILL mode.
2. Adjust VR2003 so that the V-dancing does not appear on the TV Monitor screen.

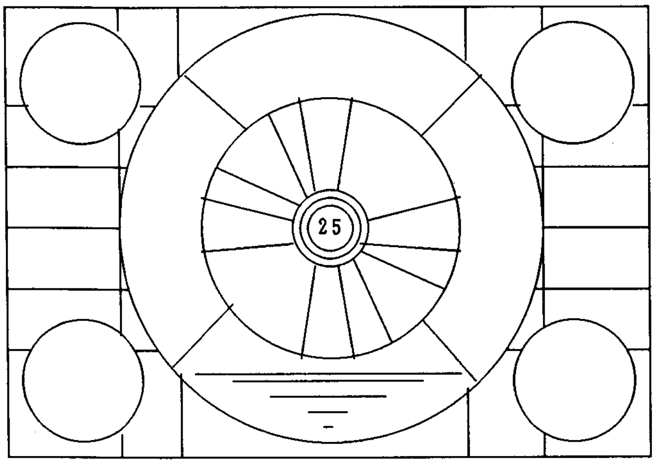


Fig.18

LUMINANCE, CHROMINANCE & HEAD AMP SECTION

2-5-7. HQ AMP GAIN ADJUSTMENT

TP	ADJ.	MODE	INPUT
P301-1 (CH 1) P301-3 (CH 2)	VR3601		VIDEO SIGNAL
TAPE	M. EQ.	SPEC.	
	OSCILLO-SCOPE	MINIMUM	

1. Set the "EDIT SW" (Front Side) to the NORMAL position.
2. Set the output of VIDEO SIGNAL GENERATOR to 1Vp-p (Colour Bar Signal).
3. Connect the oscilloscope to P301-1, (CH1) and P301-3 (CH2)
4. Set the oscilloscope to "ADD" mode. And set the Porality switch of CH2 side to "INV" (Invert) mode.
5. Adjust the VR3601 so that operational amplitude becomes MINIMUM as shown below.

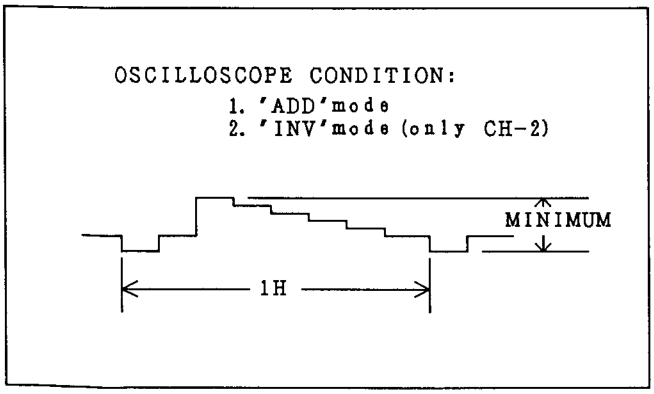

OSCILLOSCOPE CONDITION:
1. 'ADD'mode
2. 'INV'mode (only CH-2)
MINIMUM
1H

Fig.19

2-5-8. LUMINANCE RECORDING CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3003 (HOT) TP3004 (GND)	VR3001	REC. PLAY	VIDEO SIGNAL
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO-SCOPE	150+-5mVp-p	

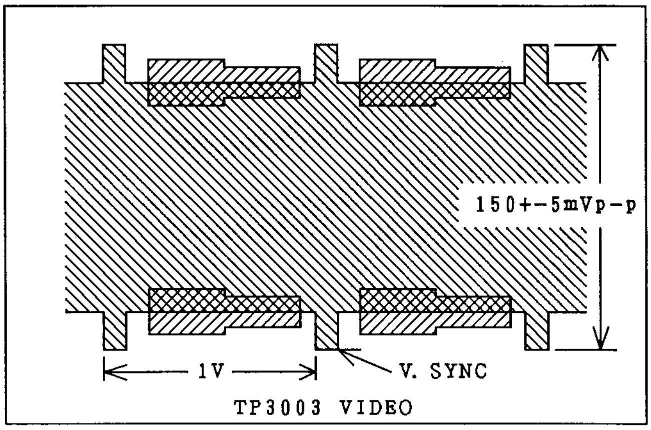

150+-5mVp-p
1V
V. SYNC
TP3003 VIDEO

Fig.20

*Note:
Test points TP3003 and TP3004 are located on the Head Amp Pack C.B.A. (VEP05082).

2-5-9.PLAYBACK CHROMA CYAN LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT (TP3002)	VR801	SELF RECORDING	VIDEO SIGNAL
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO-SCOPE	0.55+-0.05Vp-p	

1. Playback the just recorded portion.
2. Adjust VR801 so that the cyan signal becomes 0.55+-0.05Vp-p.

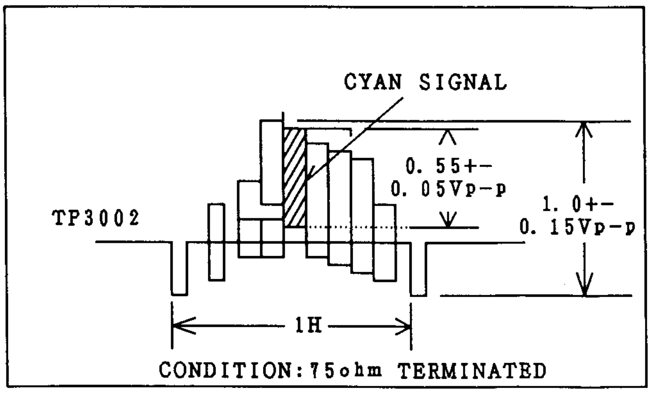
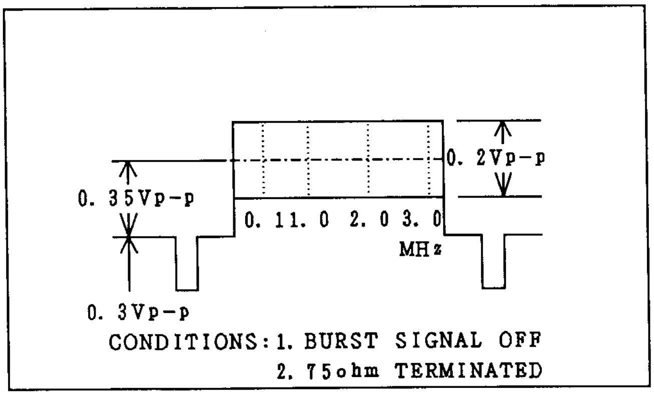

CYAN SIGNAL
0. 55+-
0. 05Vp-p
1. 0+-
0. 15Vp-p
TP3002
1H
CONDITION:75ohm TERMINATED

Fig.21

2-5-10. HEAD AMP FREQUENCY RESPONSE ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP3002 (VIDEO OUT)	VR3051		VIDEO SWEEP
TAPE	M. EQ.	SPEC.	
BLANK TAPE	VIDEO SWEEP/ OSCILLO- SCOPE		

1. Set the sweep generator output as shown below.


0. 35Vp-p
0. 2Vp-p
0. 1 1. 0 2. 0 3. 0
MHz
0. 3Vp-p

CONDITIONS: 1. BURST SIGNAL OFF
2. 75ohm TERMINATED

Fig.22

2. Set the "EDIT SW" (Front Side) to normal position.
3. PICTURE VR is in centre fix position.
4. Playback the just recorded portion.
5. Adjust VR3051 so that the waveform becomes as shown below.

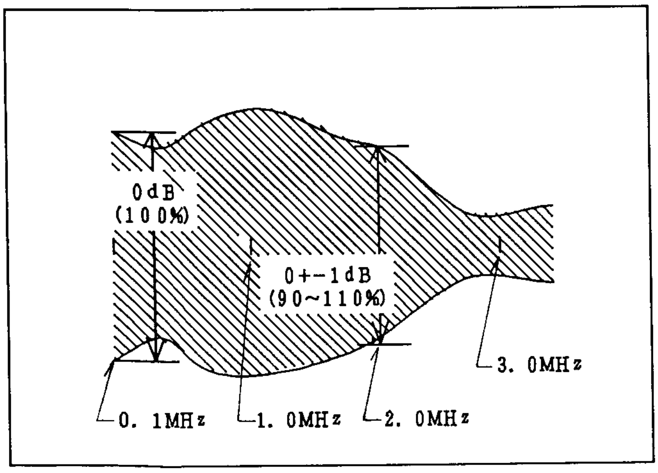

0dB
(100%)
0+-1dB
(90~110%)
0. 1MHz
1. 0MHz
2. 0MHz
3. 0MHz

Fig.23

2-5-11. SECAM KILLER ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC851-(11)	T851	REC.PLAY	SECAM VIDEO SIGNAL
TAPE	M. EQ.	SPEC.	
BLANK TAPE	OSCILLO- SCOPE		

NOTE:
To make this adjustment, please set the Luminance, Chrominance Pack & SECAM Pack as shown below.

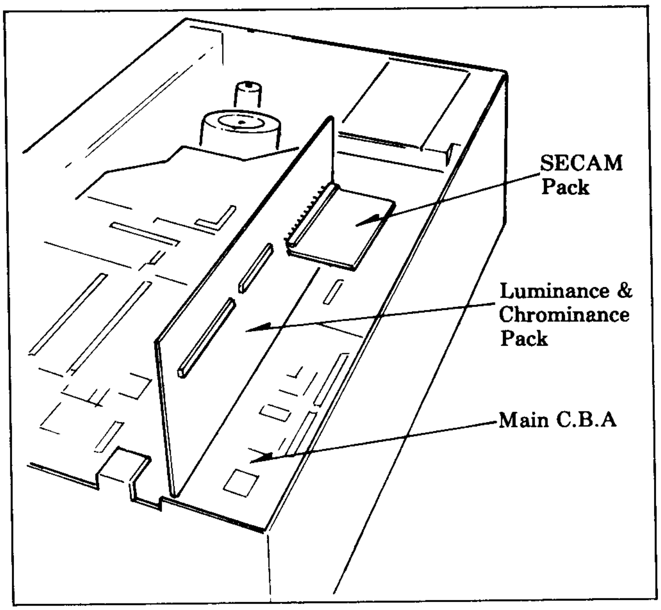

SECAM Pack
Luminance & Chrominance Pack
Main C.B.A

Fig.24

1. First, remove the Luminance & Chrominance Pack from the Main C.B.(VJB03336). Then, remove the SECAM Pack from the Luminance & Chrominance Pack.
Next, reinstall the Luminance & Chrominance Pack to Main C.B. on foil side and reinstall the SECAM Pack to Luminance & Chrominance Pack on foil side.
Finally solder the soldering portions of the Luminance & Chrominance Pack and SECAM Pack.

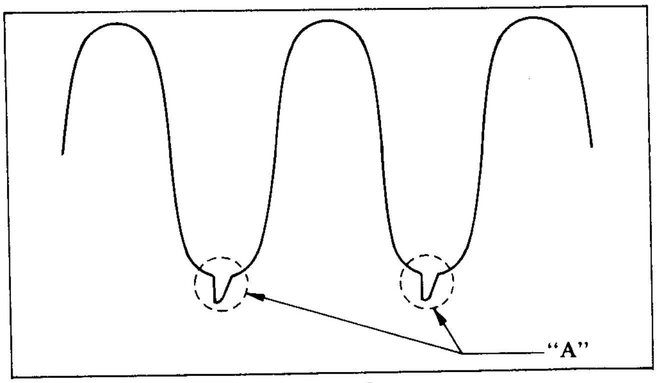


Fig.25

2. Adjust T851 so that the points "A" becomes maximum on the waveform.

AUDIO SECTION

2-5-12.AUDIO BIAS CURRENT ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP4002(+) TP4003(-)	VR4002	REC.PLAY	
TAPE	M. EQ.	SPEC.	
BLANK TAPE	V.T.V.M.	3.4+-0.1mVrms	

2-5-13.AUDIO PLAYBACK LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP4001 (AUDIO OUT)	VR4001	SELF RECORDING	1KHz,0dB AUDIO SIGNAL
TAPE	M. EQ.	SPEC.	
BLANK TAPE	SIGNAL GENERATOR /V.T.V.M.	E-E LEVEL=-7+-2dB P.B. LEVEL= E-E LEVEL+-0.5dB	

Note:
Before this adjustment, "Tape Interchangeability Adjustment" and "Audio Bias Current Adjustment" must be completed.

1.Playback the just recorded portion.
2.Adjust VR4001 so that the level of the playback waveform becomes E-E level+-0.5dB.

TIMER SECTION

2-5-14. AN ELECTRICITY FAILURE DETECTION ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP7508	VR7502		
TAPE	M. EQ.	SPEC.	
	OSCILLO-SCOPE/DC POWER SUPPLY		

Note:
Do not connect the AC power plug.

1. Set the voltage of the DC POWER SUPPLY for 4.6 +- 0.05V and supply it to IC7551-8 (+) and GND (-).
2. Set the voltage of another DC POWER SUPPLY for 45+-1V and supply it to Anode of D7555.
3. Adjust VR7502 so that the DC voltage is just turned high level into low level.
4. Confirm that the DC voltage becomes high level by supplying DC voltage for 4.8 +- 0.05V.

2-5-15.IC7501 CLOCK ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC7501-(41)	C7502	STOP	
TAPE	M. EQ.	SPEC.	
	FREQUENCY COUNTER/ DC POWER SUPPLY	3906.25+-0.008us	

1. Set the voltage of the DC POWER SUPPLY for 5.8 +- 0.1V and supply to P7503-6 (+) and GND (-).
2. Connect a jumper wire between P7503-4 and GND.
3. Connect the FREQUENCY COUNTER to IC7501-41.
4. Adjust C7502 to 3906.25 +- 0.008usec.

2-5-16. TIMER MUTING FREQUENCY ADJUSTMENT

TP	ADJ.	MODE	INPUT
IC7651-(4)	VR7660		
TAPE	M. EQ.	SPEC.	
	FREQUENCY COUNTER/ DC POWER SUPPLY	15.625+-0.05KHz	

Note:
1.Do not connect the AC power plug.
2.Connect a jumper wire to both side of R7655.

1. Set the voltage of the DC power supply for 12 +- 0.3V and supply it to IC 7651-(3)(+) and GND (-).
2. Connect the FREQUENCY COUNTER through the amplifier circuif as shown below.

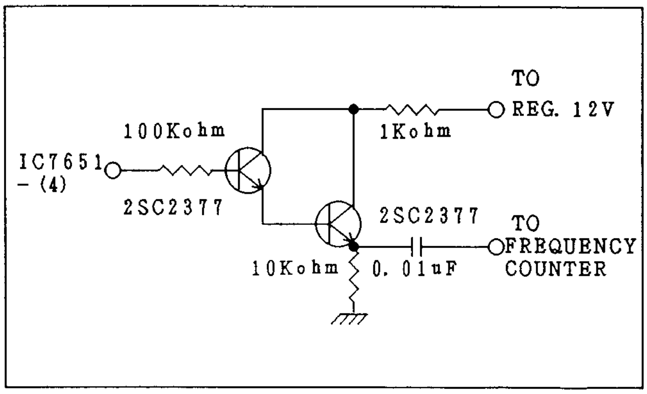


Fig.26

3. Adjust VR7660 so that the reading of the FREQUENCY COUNTER is 15.625 +- 0.05KHz.

TV DEMODULATOR SECTION

2-5-17. TEST EQUIPMENTS

To make adjustment completely, following equipments are required.

1. VIF SWEEP GENERATOR with the Trap Adjustor 38.9MHz
2. SIF SWEEP GENERATOR 5.5MHz+-150KHz
3. CW OSCILLATOR 38.9MHz+-100KHz
4. MONITOR SCOPE
5. OSCILLOSCOPE
6. DIGITAL VOLT METER
7. TUNING AMPLIFIER

Note1:
To make this adjustment, please set the TV Demodulator Pack as shown below.

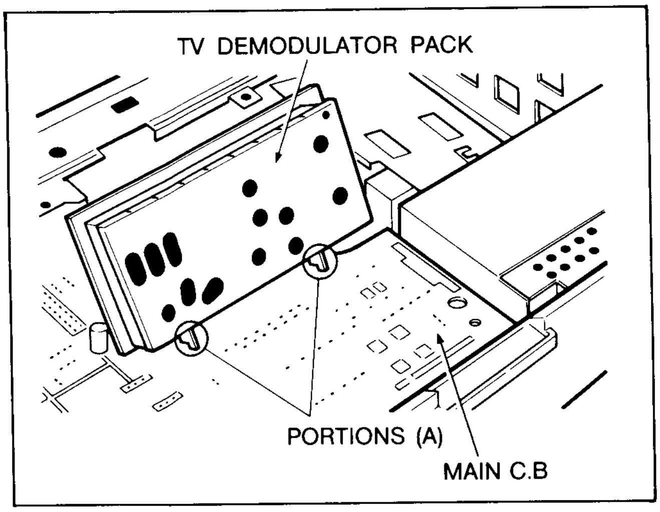

TV DEMODULATOR PACK
PORTIONS (A)
MAIN C.B

Fig.27

1. First, remove the TV Demodulator Pack from the Main C.B.
   Then, reinstall the TV Demodulator Pack to the Main C.B. on foil side and finally solder the soldering portions of the TV Demodulator Pack.
   However, when reinstalling, be extremely careful so that the portions (A) of the TV Demodulator Pack do not touch the Main C.B.

Note2:

To make adjustments, please prepare the following equipments and install them according to each adjustment item.

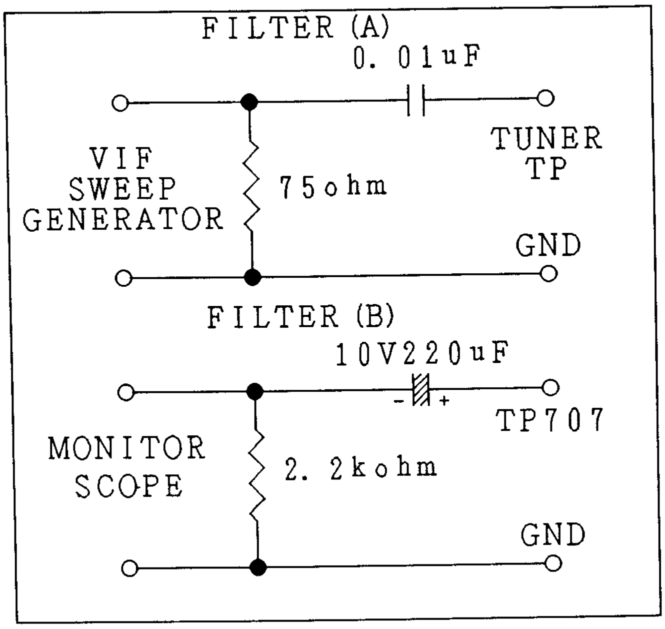

FILTER (A)
0.01uF
VIF SWEEP GENERATOR
75ohm
TUNER TP
GND
FILTER (B)
10V220uF
- +
TP707
MONITOR SCOPE
2.2kohm
GND

Fig.28

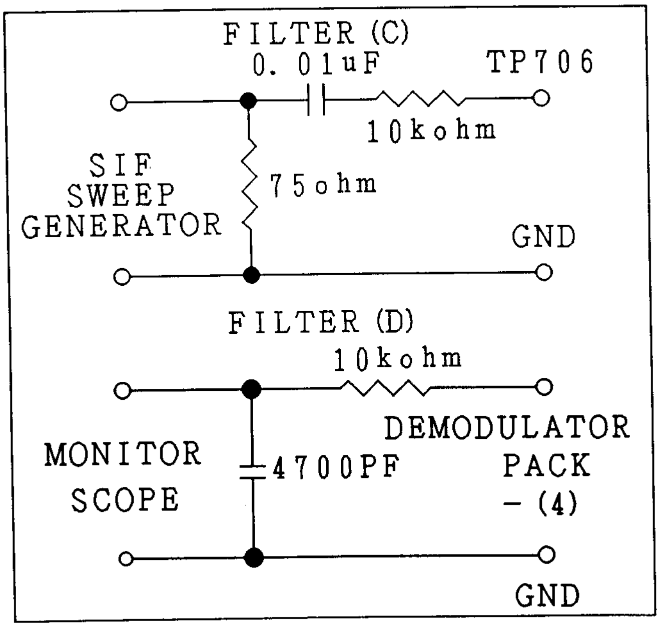

FILTER (C)
0.01uF
TP706
10kohm
SIF SWEEP GENERATOR
75ohm
GND
FILTER (D)
10kohm
DEMODULATOR PACK - (4)
MONITOR SCOPE
4700PF
GND

Fig.29

2-5-18. SELECTIVE COIL ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP707	T703 T704		VIF SWEEP
TAPE	M. EQ	SPEC.	
	VIF SWEEP/ MONITOR SCOPE	A=0.1Vp-p B=38.9MHz	

1. Set the BAND SW of the deck to the VHF high position (VH). And turn the tuning volume so that the voltage at BT terminal of the tuner becomes 15+-1V.
2. Set the MEMORY/AFC SW of the deck for OFF mode.
3. Connect a jumper wire between TUNER AGC Terminal and GND.
4. Connect the VIF SWEEP to TP703 and connect the MONITOR SCOPE to TP707 as shown below.

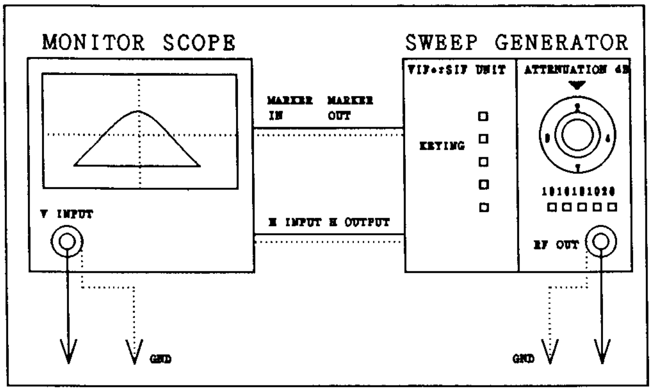


Fig.30 Connection of Measuring Equipment

5. Connect the JIG. to both points TP709 and TV DEMODULATOR PACK-(8) as shown below.

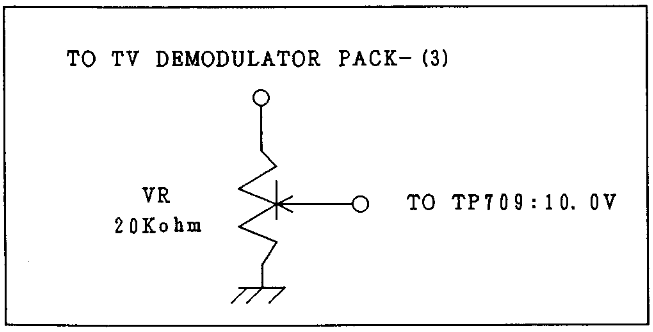


Fig.31 Adjustment JIG.2

6. Adjust the output of the VIF SWEEP GENERATOR so that the sweep wave becomes A.
7. Adjust T703 so that the marker position at B becomes peak point as shown below.

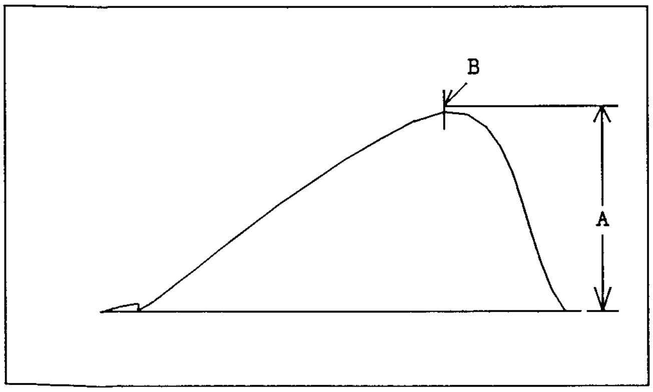


Fig.32

8. Adjust T704 so that the marker position at B becomes as shown below.

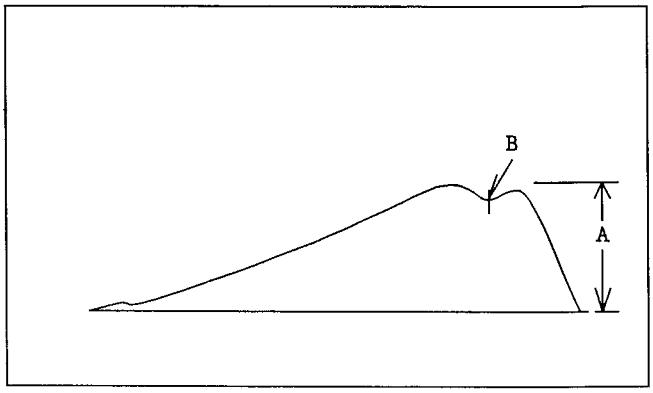


Fig.33

2-5-19. VIF SWEEP ADJUSTMENT

TP	ADJ.	MODE	INPUT
TP707	T701 T702		VIF SWEEP
TAPE	**M. EQ**	**SPEC.**	
	VIF SWEEP/ MONITOR SCOPE	Refer to the VIF specification chart. (Fig.35)	

1. Set the BAND SW to the VHF high position (VH). And turn the tuning volume so that the voltage at BT terminal of the tuner becomes 15V+-1V.
2. Set the MEMORY/AFC SW of the deck for OFF mode.
3. Connect a 100ohm resistor between TP704 and TP705.
4. Connect a jumper wire between TUNER AGC Terminal and GND.
5. Connect the VIF SWEEP GENERATOR to TUNER TEST POINT. And connect the MONITOR SCOPE to TP707.
6. Adjust the output of the VIF SWEEP GENERATOR so that the sweep wave becomes 1.0Vp-p. Then release 20dB attenuation from the attenuator of the VIF SWEEP GENERATOR.
7. Connect the JIG to the both points TP709 and TV DEMODULATOR PACK-3.
8. Adjust T702 so that the (fs) trap becomes minimum.
9. Adjust T701-(A) so that the (fs)trap becomes minimum.
10. Adjust VR1 of the JIG so that the sweep wave becomes 1.0Vp-p.
11. Adjust the tuner converter coil and T701-(C) so that the sweep output waveform becomes as follows.

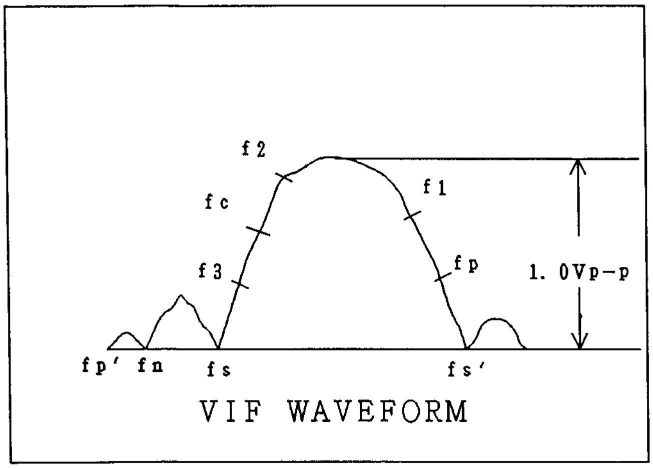


Fig.34

MODEL NO.		
MARKER FREQUENCY	f s	40. 4MHz
	f p	38. 9MHz
	f 1	38. 15MHz
	f 2	35. 22MHz
	f c	34. 47MHz
	f 3	33. 97MHz
	f s	33. 4MHz
	f n	32. 4MHz
	f p	31. 9MHz
SPECIFICATION	f p	30+-5%
	f 1	80+-10%
	f 2	80+-10%
	f c	50+-5%
	f 3	18~22%

Fig.35 VIF SPECIFICATIONS CHART

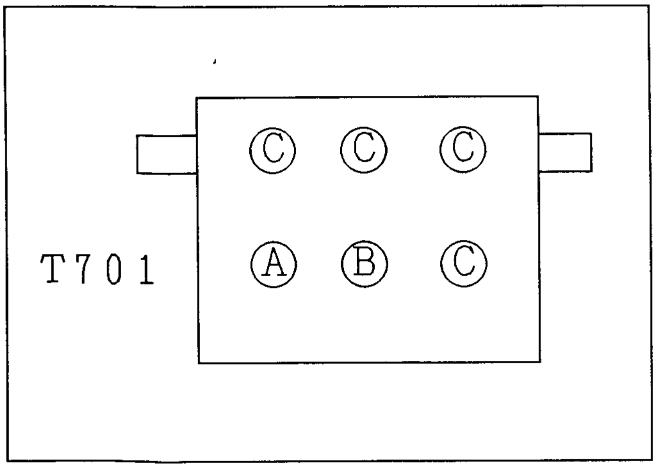


Fig.36

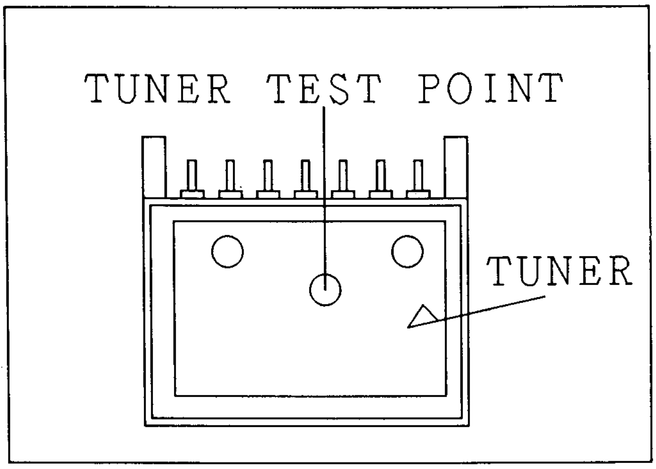


Fig.37

2-5-20.SIF SWEEP ADJUSTMENT

TP	ADJ.	MODE	INPUT
AUDIO OUT (TV DEMODU-LATOR PACK-(4))	T751 T752 VR751		SIF SWEEP
TAPE	M. EQ.	SPEC.	
	VIF SWEEP/ MONITOR SCOPE	A=5.5MHz	

1. Set the BAND SW of the deck to the VHF high position (VH). Turn the tuning volume so that the voltage at BT terminal of the tuner becomes 15V+-1V.
2. Set the MEMORY/AFC SW of the deck to the OFF mode.
3. Connect the SIF SWEEP GENERATOR to TP706 and connect the MONITOR SCOPE to AUDIO OUT.
4. Connect the JIG to the both points TP709 and TV DEMODULATOR PACK-(3). Adjust the VR1 of the JIG so that the DC level becomes less than 5V.
5. Set the output of the SIF SWEEP GENERATOR for 250mVp-p at no load.
6. Adjust VR751 so that the SIF waveform becomes maximum.
7. Adjust T752 so that the attenuation of (A) trap becomes minimum.
8. Adjust T751 for maximum peak-to-peak amplitude of response "S" curve as shown below.

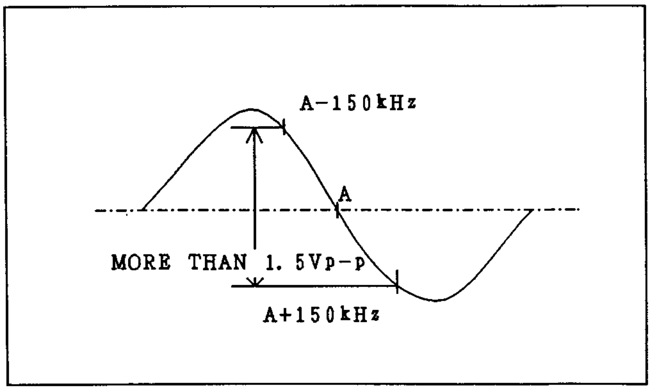


Fig.38 SIF WAVEFORM

9. Confirm that the level between the 150KHz marker positions is more than 1.5Vp-p.

2-5-21. AFC ADJUSTMENT

TP	ADJ.	MODE	INPUT
AFC TERMINAL OF THE TUNER	T704		CW SIGNAL
TAPE	M. EQ.	SPEC.	
	CW OSCILLATOR/ D.V.M.	A=38.9MHz	

1. Set the BAND SW of the deck for the VHF high position (VH). And turn the tuning volume so that the voltage at BT terminal of the tuner becomes 15V+-1V.
2. Set the CW OSCILLATOR output to (A) MHz and 1 Vp-p and connect the CW OSCILLATOR output to the TUNER TEST POINT.
3. Connect the D.V.M.to the AFC TERMINAL of the tuner.
4. Read the value "B" of the D.V.M, when the MEMORY/AFC SW is OFF.
5. Set the MEMORY/AFC SW for ON and adjust T704 to b+-0.3V.
6. Change the frequency of the CW OSCILLATOR 100KHz centred at (A) MHz and confirm that the difference of the AFC voltage is more than 2V.

2-5-22. VIDEO FREQUENCY RESPONSE ADJUSTMENT

TP	ADJ.	MODE	INPUT
VIDEO OUT (TV DEMODULATOR PACK-(2))	VR741		VIF SWEEP
TAPE	M. EQ.	SPEC.	
	OSCILLOSCOPE/ VIF SWEEP		

1. Connect the VIF SWEEP GENERATOR to TUNER Unit directly after removing the connector from RF Connector.
2. Set the BAND SW for the VHF high position (VH) and tune the tuning volume so that the VIF SWEEP signal is able to receive.
3. Set the MEMORY/AFC SW for ON mode.
4. Set the output of the VIF SWEEP GENERATOR for 800mVp-p.
5. Adjust VR741 so that the waveform at the VIDEO OUT (TV Demodulator Pack-2) becomes as shown below.

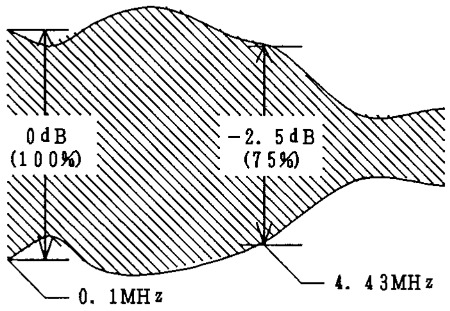


Fig.39

2-5-23. AUDIO LEVEL ADJUSTMENT

TP	ADJ.	MODE	INPUT
AUDIO OUT (TV DEMODULATOR PACK-(4))	VR751		RF SIGNAL
TAPE	M. EQ.	SPEC.	
	OSCILLOSCOPE	200mV+-10mVp-p	

1. Supply the RF Signal to RF IN TERMINAL and tune this signal.
2. Set the AFC SW for ON position.
3. Adjust VR751 so that the audio level becomes 200+-10mVp-p.

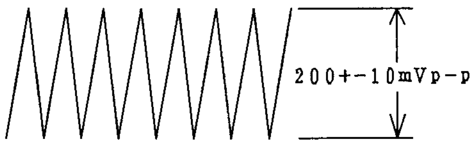
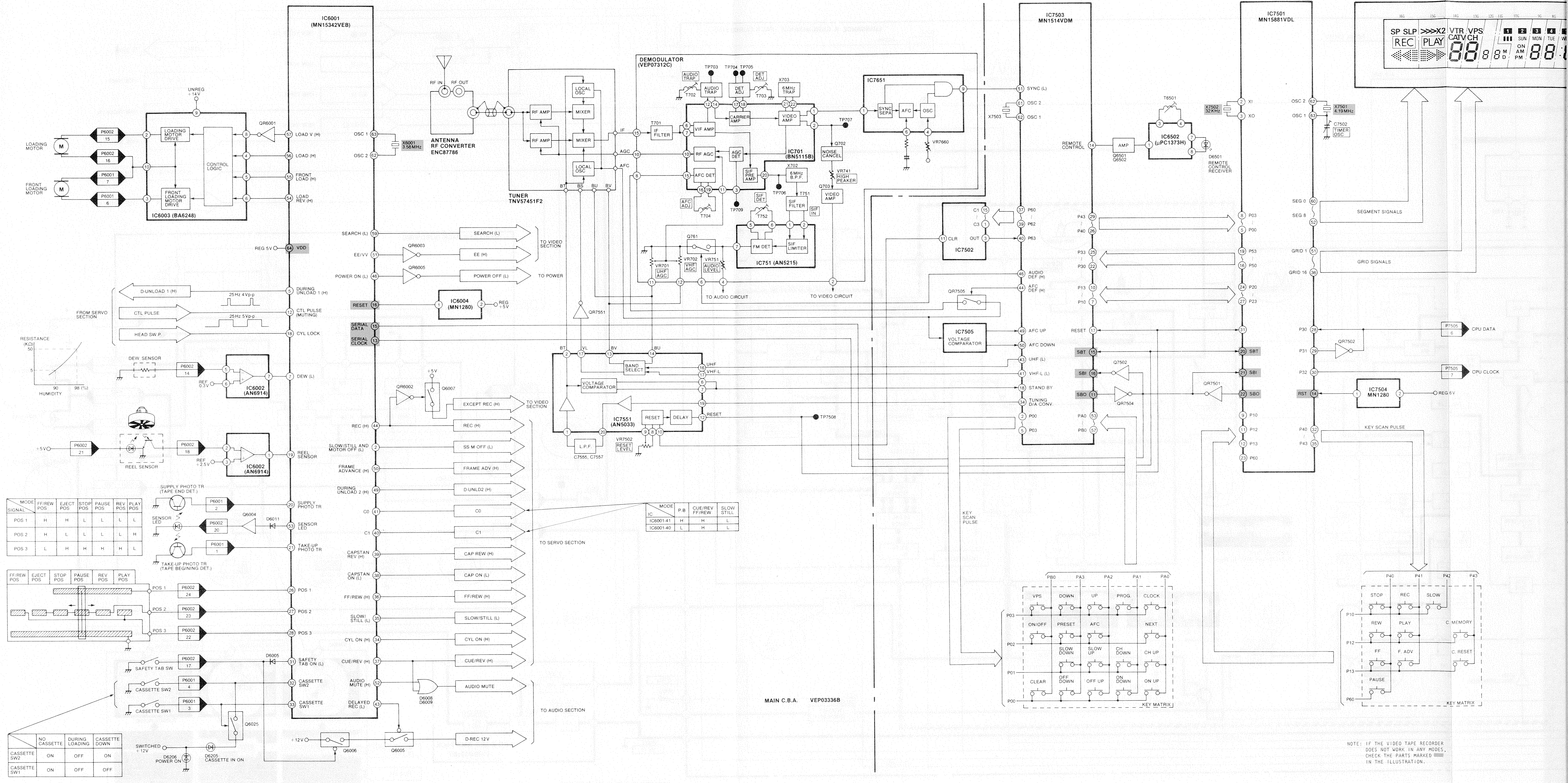


Fig.40

SECTION 3
BLOCK DIAGRAMS & SCHEMATIC DIAGRAMS

3-1. SYSTEM CONTROL BLOCK DIAGRAM


IC6001
(MN15342VEB)
IC6003 (BA6248)
LOADING MOTOR DRIVE
FRONT LOADING MOTOR DRIVE
CONTROL LOGIC
LOADING MOTOR
FRONT LOADING MOTOR
UNREG +14V
QR6001
LOAD V (H)
LOAD (H)
FRONT LOAD (H)
LOAD REV (H)
OSC 1
OSC 2
X6001 3.58MHz
REG 5V
VDD
SEARCH (L)
EE/VV
POWER ON (L)
QR6003
QR6005
SEARCH (L)
EE (H)
POWER OFF (L)
TO VIDEO SECTION
TO POWER
D-UNLOAD 1 (H)
CTL PULSE
HEAD SW P.
FROM SERVO SECTION
DURING UNLOAD 1 (H)
CTL PULSE (MUTING)
CYL LOCK
25Hz 4Vp-p
25Hz 5Vp-p
RESET
SERIAL DATA
SERIAL CLOCK
IC6004
(MN1280)
REG +5V
RESISTANCE (KΩ)
HUMIDITY
DEW SENSOR
IC6002
(AN6914)
REF 0.3V
REF +2.5V
DEW (L)
REEL SENSOR
SUPPLY PHOTO TR (TAPE END DET.)
SENSOR LED
TAKE-UP PHOTO TR (TAPE BEGINING DET.)
SUPPLY PHOTO TR
SENSOR LED
TAKE-UP PHOTO TR
Q6004
D6011
POS 1
POS 2
POS 3
SAFETY TAB SW
CASSETTE SW2
CASSETTE SW1
SAFETY TAB ON (L)
CASSETTE SW2
CASSETTE SW1
D6005
Q6025
SWITCHED +12V
D6206 POWER ON
D6205 CASSETTE IN ON
+12V
Q6006
Q6005
QR6002
Q6007
EXCEPT REC (H)
REC (H)
SS M OFF (L)
FRAME ADV (H)
D-UNLD2 (H)
C0
C1
CAP REW (H)
CAP ON (L)
FF/REW (H)
SLOW/STILL (L)
CYL ON (H)
CUE/REV (H)
AUDIO MUTE
D-REC 12V
D6008
D6009
TO VIDEO SECTION
TO SERVO SECTION
TO AUDIO SECTION
ANTENNA RF CONVERTER
ENC87786
RF IN
RF OUT
TUNER
TNV57451F2
RF AMP
MIXER
LOCAL OSC
IF
AGC
AFC
DEMODULATOR
(VEP07312C)
IF FILTER
T701
VIF AMP
RF AGC
AFC DET
AGC DET
CARRIER AMP
VIDEO AMP
IC701
(BN5115B)
SIF PRE AMP
AUDIO TRAP
DET ADJ
6MHz TRAP
6MHz B.P.F
NOISE CANCEL
VR741 HIGH PEAKER
VIDEO AMP
SIF DET
SIF FILTER
AFC ADJ
FM DET
SIF LIMITER
IC751 (AN5215)
Q761
VR701 UHF AGC
VR702 VHF AGC
VR751 AUDIO LEVEL
TO AUDIO CIRCUIT
TO VIDEO CIRCUIT
IC7651
SYNC SEPA
AFC
OSC
VR7660
QR7551
BAND SELECT
VOLTAGE COMPARATOR
IC7551
(AN5033)
RESET
DELAY
VR7502 RESET LEVEL
L.P.F
C7555, C7557
TP7508
IC7503
MN1514VDM
SYNC (L)
OSC 2
OSC 1
X7503
IC7502
CLR
IC7505
VOLTAGE COMPARATOR
AUDIO DEF (H)
AFC DEF (H)
AFC UP
AFC DOWN
UHF (L)
VHF-L (L)
STAND BY
TUNING D/A CONV.
QR7505
SBT
SBI
SBO
Q7502
Q7504
QR7501
REMOTE CONTROL
AMP
Q6501
Q6502
IC6502
(μPC1373H)
T6501
D6501 REMOTE CONTROL RECEIVER
X7502 32KHz
IC7501
MN15881VDL
X7501 4.19MHz
C7502 TIMER OSC
SEGMENT SIGNALS
GRID SIGNALS
SEG 0
SEG 8
GRID 1
GRID 16
QR7502
P7505
CPU DATA
CPU CLOCK
RST
IC7504
MN1280
REG 6V
KEY SCAN PULSE
KEY MATRIX
VPS
DOWN
UP
PROG.
CLOCK
ON/OFF
PRESET
AFC
NEXT
SLOW DOWN
SLOW UP
CH DOWN
CH UP
CLEAR
OFF DOWN
OFF UP
ON DOWN
ON UP
STOP
REC
SLOW
REW
PLAY
C. MEMORY
FF
F. ADV
C. RESET
PAUSE
SP SLP
>>>X2
VTR
VPS
REC
PLAY
CATV
CH
SUN
MON
TUE
ON
AM
PM
MAIN C.B.A.
VEP03336B

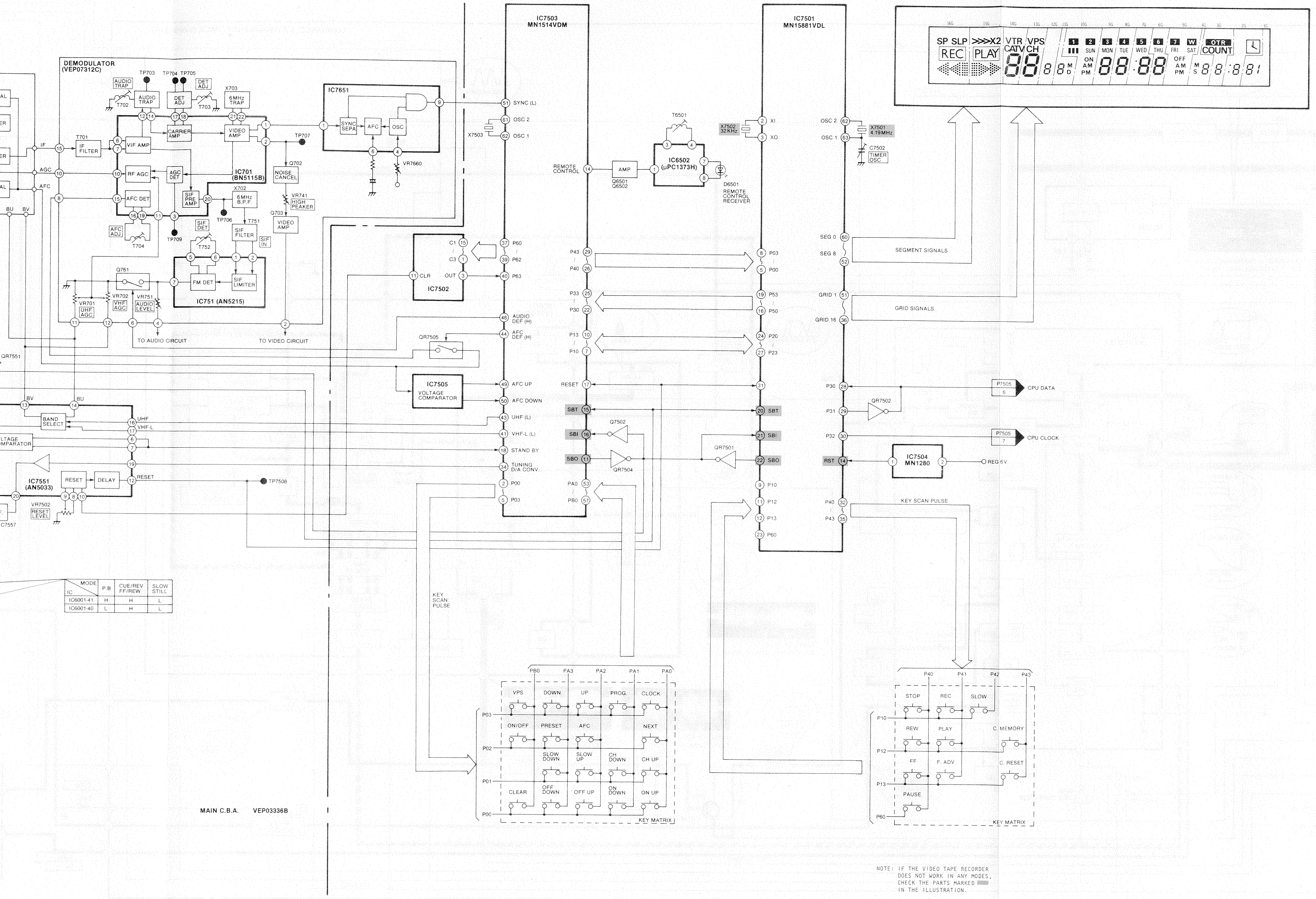
MODE / SIGNAL	FF/REW POS	EJECT POS	STOP POS	PAUSE POS	REV POS	PLAY POS
POS 1	H	H	L	L	L	L
POS 2	H	L	L	L	L	H
POS 3	L	H	H	H	H	L

	NO CASSETTE	DURING LOADING	CASSETTE DOWN
CASSETTE SW2	ON	OFF	ON
CASSETTE SW1	ON	OFF	OFF

MODE / IC	P.B	CUE/REV FF/REW	SLOW STILL
IC6001-41	H	H	L
IC6001-40	L	H	L

NOTE: IF THE VIDEO TAPE RECORDER DOES NOT WORK IN ANY MODES, CHECK THE PARTS MARKED ▨ IN THE ILLUSTRATION.

AMS

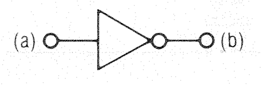

DEMODULATOR (VEP07312C)
IC701 (BN5115B)
IC751 (AN5215)
IC7651
IC7503 MN1514VDM
IC7501 MN15881VDL
IC6502 (µPC1373H)
IC7502
IC7505 VOLTAGE COMPARATOR
IC7504 MN1280
IC7551 (AN5033)
VIF AMP
RF AGC
AFC DET
CARRIER AMP
VIDEO AMP
SIF PRE AMP
6MHz B.P.F
FM DET
SIF LIMITER
SIF FILTER
NOISE CANCEL
HIGH PEAKER
VIDEO AMP
SYNC SEPA
AFC
OSC
AUDIO TRAP
DET ADJ
6MHz TRAP
AFC ADJ
IF FILTER
UHF AGC
VHF AGC
AUDIO LEVEL
BAND SELECT
VOLTAGE COMPARATOR
RESET
DELAY
TO AUDIO CIRCUIT
TO VIDEO CIRCUIT
REMOTE CONTROL
AMP
D6501 REMOTE CONTROL RECEIVER
X7502 32KHz
X7501 4.19MHz
C7502 TIMER OSC
SEGMENT SIGNALS
GRID SIGNALS
CPU DATA
CPU CLOCK
KEY SCAN PULSE
SYNC (L)
AFC UP
AFC DOWN
UHF (L)
VHF-L (L)
STAND BY
TUNING D/A CONV.
AUDIO DEF (H)
AFC DEF (H)
SBT
SBI
SBO
RST
REG 6V
SP SLP >>>X2 VTR VPS
REC PLAY CATV CH
SUN MON TUE WED THU FRI SAT
OTR COUNT
VPS DOWN UP PROG. CLOCK
ON/OFF PRESET AFC NEXT
SLOW DOWN SLOW UP CH DOWN CH UP
CLEAR OFF DOWN OFF UP ON DOWN ON UP
STOP REC SLOW
REW PLAY C.MEMORY
FF F.ADV C.RESET
PAUSE
KEY MATRIX
MAIN C.B.A. VEP03336B

MODE / IC	P.B	CUE/REV FF/REW	SLOW STILL
IC6001-41	H	H	L
IC6001-40	L	H	L

NOTE: IF THE VIDEO TAPE RECORDER DOES NOT WORK IN ANY MODES, CHECK THE PARTS MARKED ▨ IN THE ILLUSTRATION.

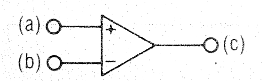
SYMBOL — **TRUTH VALUE TABLE**

INVERTER



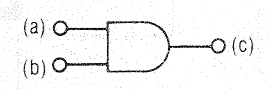
IN	(a)	H	L
OUT	(b)	L	H

COMPARATOR



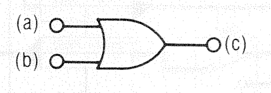
IN	(a) (b)	(a)>(b)	(a)<(b)
OUT	(c)	H	L

AND CIRCUIT



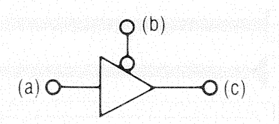
IN	(a)	L	L	H	H
	(b)	L	H	L	H
OUT	(c)	L	H	H	H

OR CIRCUIT



IN	(a)	L	L	H	H
	(b)	L	H	L	H
OUT	(c)	L	L	L	H

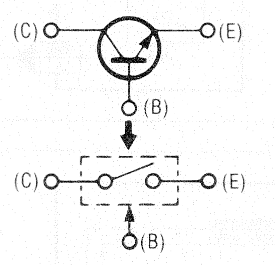
THREE STATES BUFFER



IN	(a)	H	L	H or L
	(b)	L	L	H
OUT	(c)	H	L	※

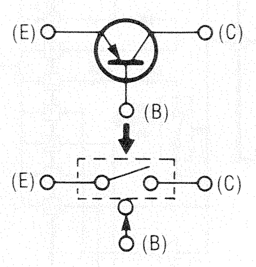
※ High Impedance

TR. SW (NPN TYPE)



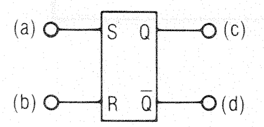
BASE	H	L
TR. SW	ON	OFF

TR. SW (PNP TYPE)



BASE	H	L
TR. SW	OFF	ON

R-S TYPE FLIP-FLOP

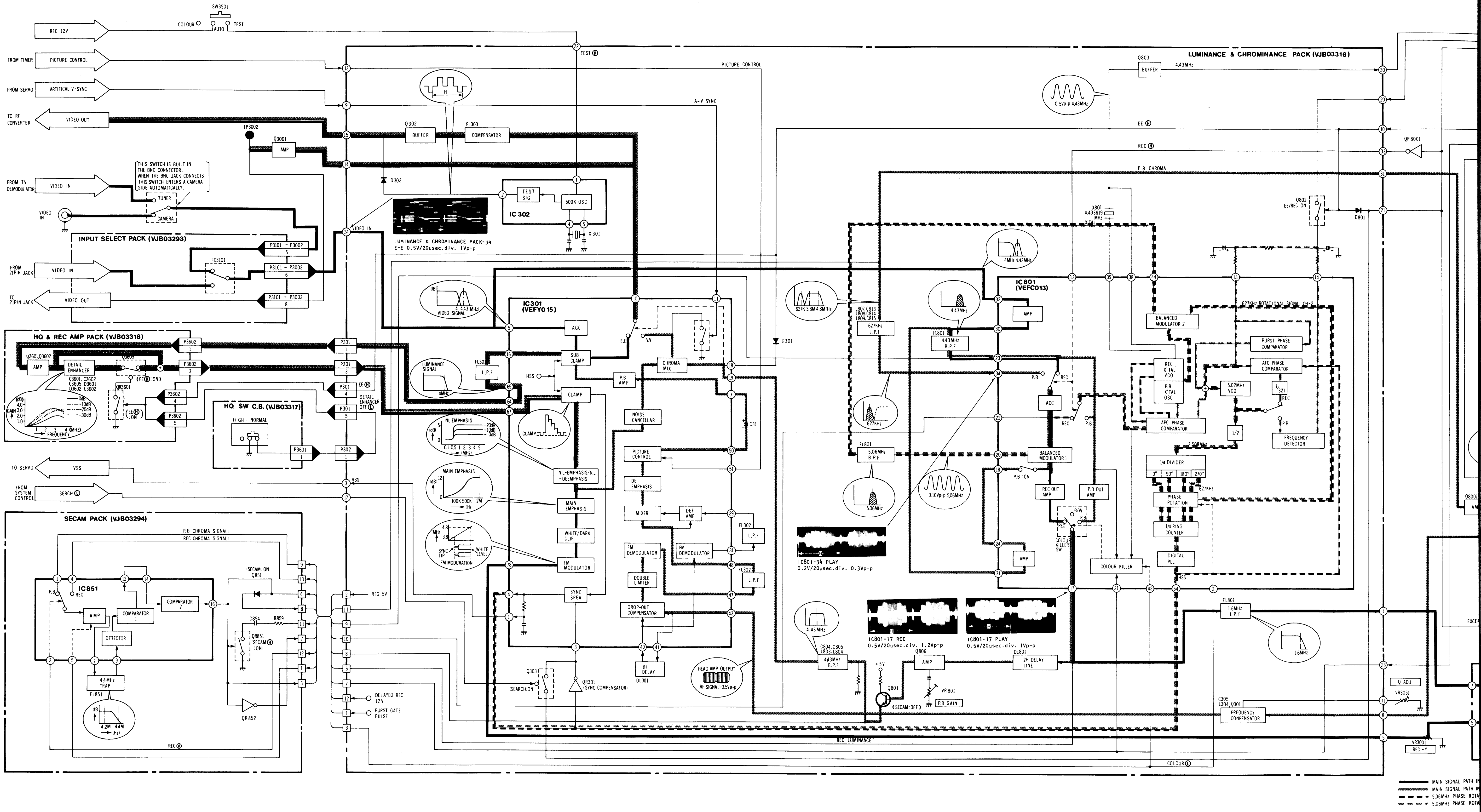


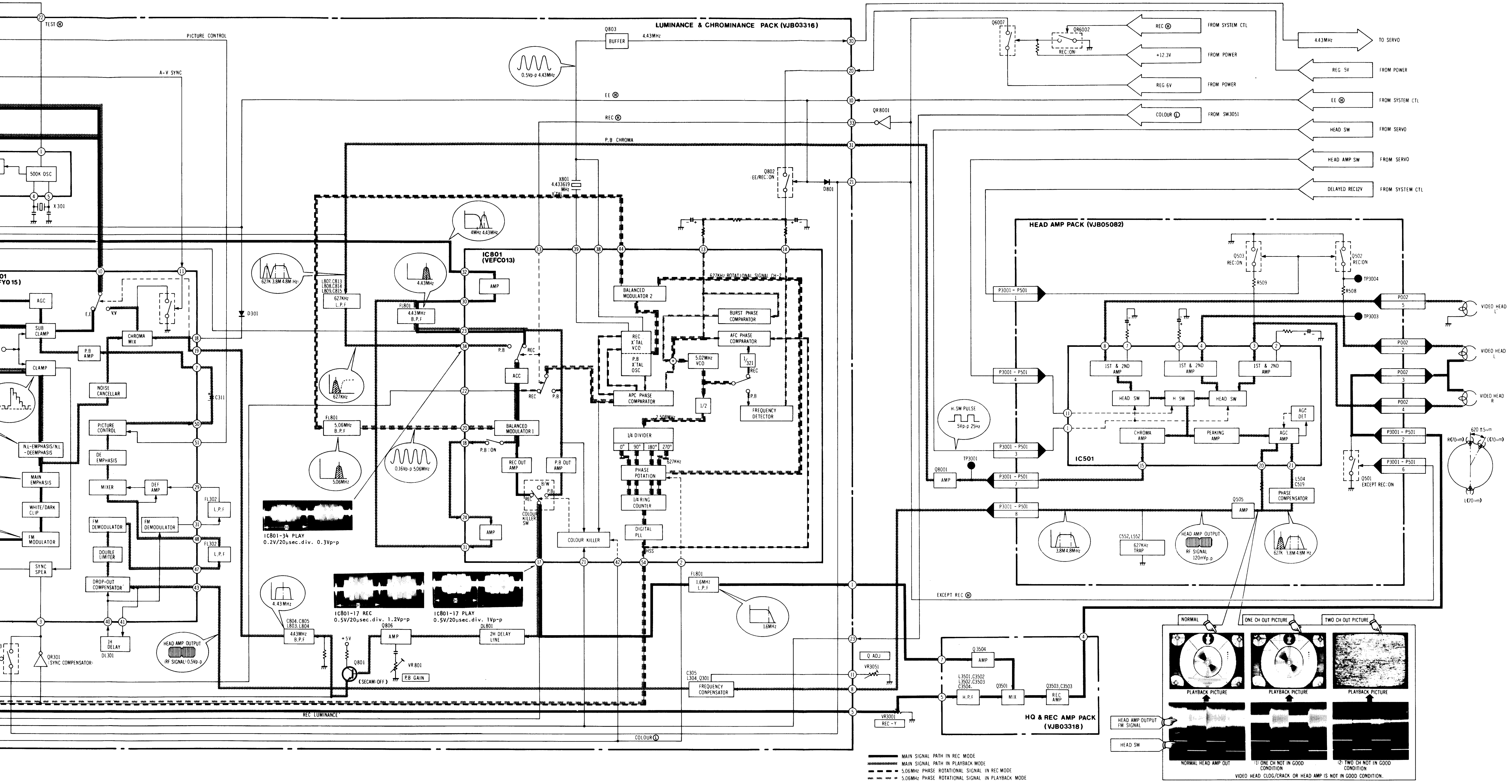
IN	(a)	L	L	⎍
	(b)	L	⎍	L
OUT	(c)	※	L	H
	(d)	◆	H	L

※ Initial condition is maintained.
◆ Initial condition is reverced.

Next Page:
LUMINANCE & CHROMINANCE Section

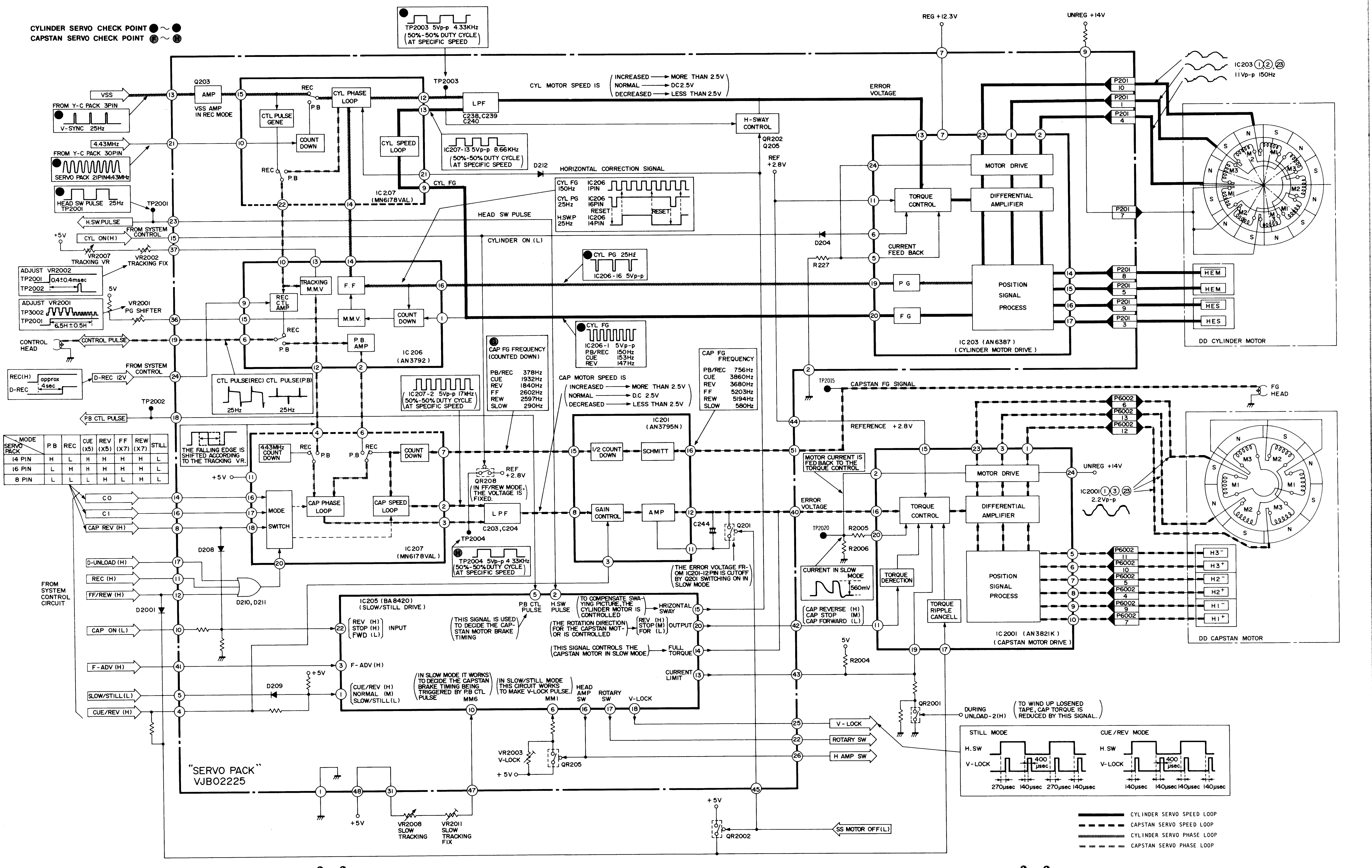
3-2. LUMINANCE & CHROMINANCE BLOCK DIAGRAM


SW3501
COLOUR
AUTO
TEST
REC 12V
FROM TIMER
PICTURE CONTROL
FROM SERVO
ARTIFICAL V-SYNC
TO RF CONVERTER
VIDEO OUT
TP3002
Q3001
AMP
Q302
BUFFER
FL303
COMPENSATOR
THIS SWITCH IS BUILT IN THE BNC CONNECTOR. WHEN THE BNC JACK CONNECTS, THIS SWITCH ENTERS A CAMERA SIDE AUTOMATICALLY.
FROM TV DEMODULATOR
VIDEO IN
TUNER
CAMERA
D302
TEST SIG
500K OSC
IC 302
X301
LUMINANCE & CHROMINANCE PACK-34
E-E 0.5V/20μsec.div. 1Vp-p
INPUT SELECT PACK (VJB03293)
IC3101
P3101 - P3002
FROM 21PIN JACK
TO 21PIN JACK
VIDEO OUT
HQ & REC AMP PACK (VJB03318)
Q3601,Q3602
AMP
DETAIL ENHANCER
C3601, C3602
C3605, D3601
D3602, L3602
Q3605
Q3601
(EE Ⓡ:ON)
P3602
P301
P302
EE Ⓡ
DETAIL ENHANCER OFF Ⓛ
GAIN
FREQUENCY
HQ SW C.B. (VJB03317)
HIGH - NORMAL
P3601
TO SERVO
VSS
FROM SYSTEM CONTROL
SERCH Ⓛ
SECAM PACK (VJB03294)
P.B CHROMA SIGNAL
REC CHROMA SIGNAL
IC851
P.B
REC
AMP
COMPARATOR 1
COMPARATOR 2
DETECTOR
4.4MHz TRAP
FL851
4.2M 4.4M
(SECAM:ON)
Q851
C854
R859
QR851
SECAM Ⓗ :ON
QR852
REC Ⓗ
REG 5V
DELAYED REC 12V
BURST GATE PULSE
VIDEO IN
VIDEO SIGNAL
4 4.43 (MHz)
IC301 (VEFY015)
AGC
SUB CLAMP
HSS
CLAMP
FL301
L.P.F
LUMINANCE SIGNAL
4MHz
NL EMPHASIS
N.L-EMPHASIS/N.L -DEEMPHASIS
MAIN EMPHASIS
100K 500K 2M
WHITE/DARK CLIP
FM MODULATOR
SYNC TIP
WHITE LEVEL
FM MODURATION
SYNC SPEA
Q303
(SEARCH:ON)
QR301
(SYNC COMPENSATOR)
E.E
V.V
CHROMA MIX
P.B AMP
NOISE CANCELLAR
PICTURE CONTROL
DE EMPHASIS
MIXER
DEF AMP
FM DEMODULATOR
DOUBLE LIMITER
DROP-OUT COMPENSATOR
1H DELAY
DL301
FL302
L.P.F
C311
HEAD AMP OUTPUT (RF SIGNAL) 0.5Vp-p
D301
PICTURE CONTROL
A-V SYNC
TEST Ⓗ
LUMINANCE & CHROMINANCE PACK (VJB03316)
Q803
BUFFER
4.43MHz
0.5Vp-p 4.43MHz
EE Ⓗ
REC Ⓗ
P.B CHROMA
QR8001
X801
4.433619 MHz
Q802
EE/REC:ON
D801
627K 3.8M 4.8M (Hz)
L807,C813
L808,C814
L809,C815
627KHz L.P.F
FL801
4.43MHz B.P.F
4MHz 4.43MHz
IC801 (VEFC013)
AMP
ACC
BALANCED MODULATOR 1
BALANCED MODULATOR 2
REC OUT AMP
P.B OUT AMP
B/W
COLOUR KILLER SW
COLOUR KILLER
5.06MHz B.P.F
5.06MHz
0.16Vp-p 5.06MHz
627KHz
P.B:ON
IC801-34 PLAY
0.2V/20μsec.div. 0.3Vp-p
IC801-17 REC
0.5V/20μsec.div. 1.2Vp-p
IC801-17 PLAY
0.5V/20μsec.div. 1Vp-p
C804,C805
L803,L804
443MHz B.P.F
Q801
(SECAM:OFF)
Q806
AMP
VR801
P.B GAIN
2H DELAY LINE
DL801
627KHz ROTATIONAL SIGNAL CH-2
BURST PHASE COMPARATOR
AFC PHASE COMPARATOR
REC X'TAL VCO
P.B X'TAL OSC
APC PHASE COMPARATOR
5.02MHz VCO
1/321
1/2
FREQUENCY DETECTOR
2.508MHz
1/4 DIVIDER
0° 90° 180° 270°
PHASE POTATION
627KHz
1/4 RING COUNTER
DIGITAL PLL
HSS
FL801
1.6MHz L.P.F
1.6MHz
Q ADJ
VR3051
C305
L304, Q301
FREQUENCY CONPENSATOR
VR3001
REC - Y
REC LUMINANCE
COLOUR Ⓛ
Q8001
AMP
EXCEP
MAIN SIGNAL PATH IN
MAIN SIGNAL PATH IN
5.06MHz PHASE ROTA
5.06MHz PHASE ROTA


LUMINANCE & CHROMINANCE PACK (VJB03316)
HEAD AMP PACK (VJB05082)
HQ & REC AMP PACK (VJB03318)
IC801 (VEFC013)
IC501
TEST Ⓗ
PICTURE CONTROL
A-V SYNC
EE Ⓗ
REC Ⓗ
P.B CHROMA
Q803
BUFFER
4.43MHz
0.5Vp-p 4.43MHz
X801 4.433619 MHz X'TAL
500K OSC
X301
AGC
SUB CLAMP
CLAMP
CHROMA MIX
P.B AMP
NOISE CANCELLAR
PICTURE CONTROL
DE EMPHASIS
MIXER
DEF AMP
FM DEMODULATOR
DOUBLE LIMITER
DROP-OUT COMPENSATOR
1H DELAY
DL301
N.L-EMPHASIS/N.L-DEEMPHASIS
MAIN EMPHASIS
WHITE/DARK CLIP
FM MODULATOR
SYNC SPEA
QR301 (SYNC COMPENSATOR)
D301
C311
FL302 L.P.F
HEAD AMP OUTPUT (RF SIGNAL) 0.5Vp-p
L807,C813 L808,C814 L809,C815
627KHz L.P.F
627K 3.8M 4.8MHz
627KHz
FL801 4.43MHz B.P.F
4MHz 4.43MHz
FL801 5.06MHz B.P.F
5.06MHz
0.16Vp-p 5.06MHz
AMP
ACC
BALANCED MODULATOR 1
BALANCED MODULATOR 2
REC OUT AMP
P.B OUT AMP
P.B : ON
B/W
COLOUR KILLER SW
COLOUR KILLER
REC X'TAL VCO
P.B X'TAL OSC
BURST PHASE COMPARATOR
AFC PHASE COMPARATOR
APC PHASE COMPARATOR
5.02MHz VCO
1/321
1/2
FREQUENCY DETECTOR
627KHz ROTATIONAL SIGNAL CH-2
2.508MHz
1/4 DIVIDER
0° 90° 180° 270°
627KHz
PHASE ROTATION
1/4 RING COUNTER
DIGITAL PLL
HSS
IC801-34 PLAY 0.2V/20μsec.div. 0.3Vp-p
IC801-17 REC 0.5V/20μsec.div. 1.2Vp-p
IC801-17 PLAY 0.5V/20μsec.div. 1Vp-p
C804,C805 L803,L804
443MHz B.P.F
Q806 AMP
DL801 2H DELAY LINE
+5V
Q801
(SECAM:OFF)
VR801 P.B GAIN
FL801 1.6MHz L.P.F
1.6MHz
C305 L304,Q301
FREQUENCY COMPENSATOR
REC LUMINANCE
COLOUR Ⓛ
Q802 EE/REC:ON
D801
QR8001
Q6007
QR6002
REC:ON
REC Ⓗ FROM SYSTEM CTL
+12.3V FROM POWER
REG 6V FROM POWER
COLOUR Ⓛ FROM SW3051
4.43MHz TO SERVO
REG 5V FROM POWER
EE Ⓗ FROM SYSTEM CTL
HEAD SW FROM SERVO
HEAD AMP SW FROM SERVO
DELAYED REC12V FROM SYSTEM CTL
Q503 REC:ON
Q502 REC:ON
R509
R508
TP3004
TP3003
P3001 - P501
P002
VIDEO HEAD L'
VIDEO HEAD L
VIDEO HEAD R
1ST & 2ND AMP
HEAD SW
H SW
CHROMA AMP
PEAKING AMP
AGC AMP
AGC DET
L504 L519
PHASE COMPENSATOR
Q505 AMP
H.SW PULSE 5Vp-p 25Hz
TP3001
Q8001 AMP
Q501 EXCEPT REC:ON
620 ±5μm
R(70μm)
L'(70μm)
L(70μm)
3.8M4.8MHz
C552,L552 627KHz TRAP
HEAD AMP OUTPUT RF SIGNAL 120mVp-p
627K 3.8M4.8M Hz
EXCEPT REC Ⓗ
Q ADJ
VR3051
VR3001 REC-Y
Q3504 AMP
L3501,C3502 L3502,C3503 C3504.
H.P.F
Q3501 MIX
Q3503,C3503 REC AMP
NORMAL
ONE CH OUT PICTURE
TWO CH OUT PICTURE
PLAYBACK PICTURE
HEAD AMP OUTPUT FM SIGNAL
HEAD SW
NORMAL HEAD AMP OUT
(1) ONE CH NOT IN GOOD CONDITION
(2) TWO CH NOT IN GOOD CONDITION
VIDEO HEAD CLOG/CRACK OR HEAD AMP IS NOT IN GOOD CONDITION.

▬▬ MAIN SIGNAL PATH IN REC MODE
▨▨ MAIN SIGNAL PATH IN PLAYBACK MODE
– – – 5.06MHz PHASE ROTATIONAL SIGNAL IN REC MODE
- - - 5.06MHz PHASE ROTATIONAL SIGNAL IN PLAYBACK MODE

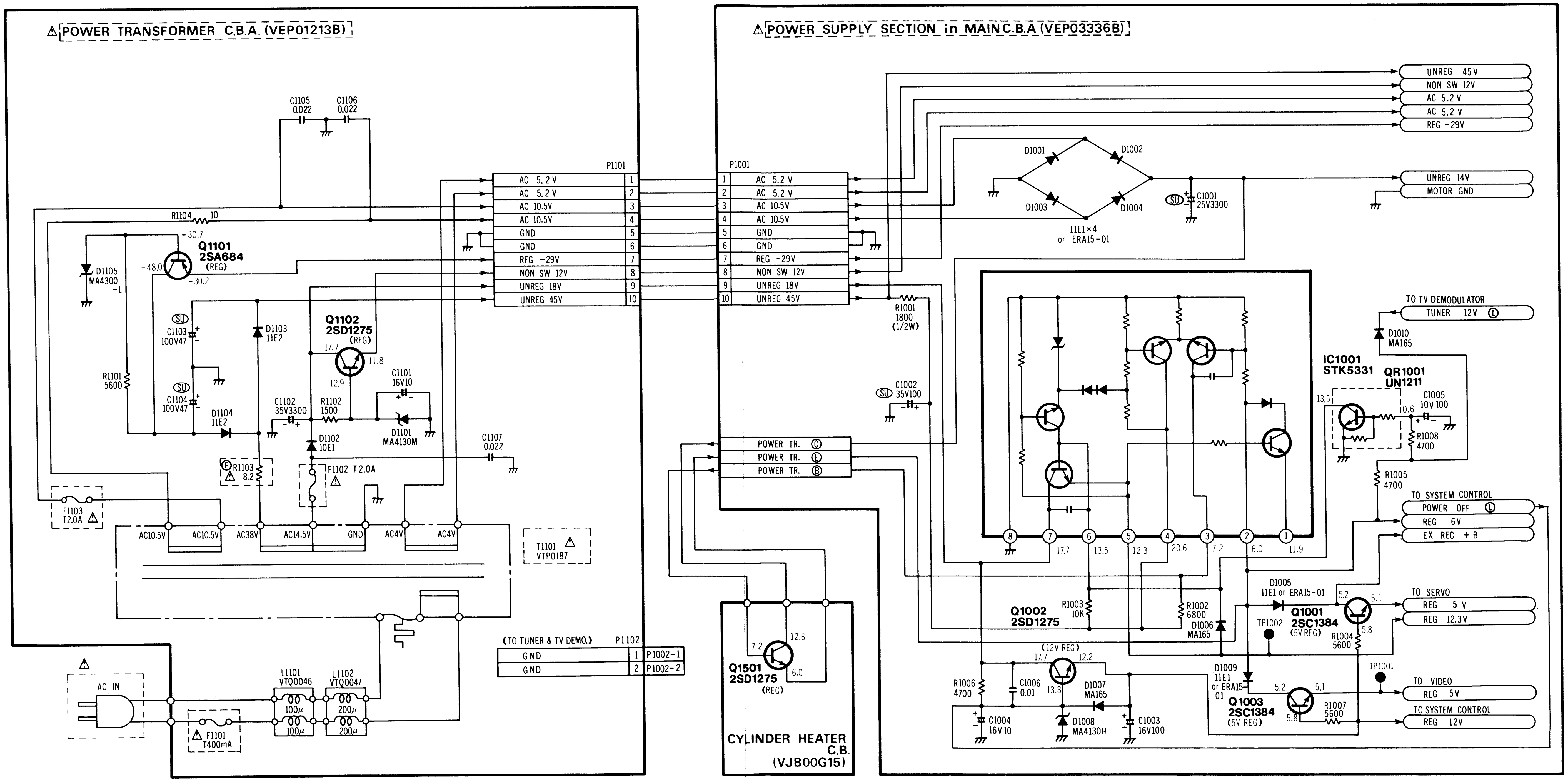
3-3. SERVO BLOCK DIAGRAM



CYLINDER SERVO CHECK POINT ● ~ ●
CAPSTAN SERVO CHECK POINT Ⓕ ~ Ⓗ
TP2003 5Vp-p 4.33KHz (50%-50% DUTY CYCLE AT SPECIFIC SPEED)
REG +12.3V
UNREG +14V
IC203 ① ② ㉓ 11Vp-p 150Hz
VSS
FROM Y-C PACK 3PIN
V-SYNC 25Hz
4.43MHz
FROM Y-C PACK 30PIN
SERVO PACK 21PIN 4.43MHz
HEAD SW PULSE 25Hz TP2001
TP2001
H.SW.PULSE
FROM SYSTEM CONTROL
+5V
CYL ON(H)
VR2007 TRACKING VR
VR2002 TRACKING FIX
ADJUST VR2002
TP2001 0.4±0.4msec
TP2002
ADJUST VR2001
TP3002
TP2001 6.5H±0.5H
VR2001 PG SHIFTER
CONTROL HEAD
CONTROL PULSE
REC(H)
D-REC
approx 4sec
D-REC 12V
FROM SYSTEM CONTROL
TP2002
P.B CTL PULSE
Q203
AMP
VSS AMP IN REC MODE
CTL PULSE GENE
REC
P.B
COUNT DOWN
CYL PHASE LOOP
CYL SPEED LOOP
IC207 (MN6178VAL)
TP2003
LPF
C238, C239 C240
IC207-13 5Vp-p 8.66KHz (50%-50% DUTY CYCLE AT SPECIFIC SPEED)
D212
HORIZONTAL CORRECTION SIGNAL
CYL FG
CYL MOTOR SPEED IS (INCREASED → MORE THAN 2.5V, NORMAL → DC 2.5V, DECREASED → LESS THAN 2.5V)
H-SWAY CONTROL
QR202 Q205
REF +2.8V
ERROR VOLTAGE
CYL FG 150Hz IC206 1PIN
CYL PG 25Hz IC206 16PIN
H.SW.P 25Hz IC206 14PIN
RESET
HEAD SW PULSE
CYLINDER ON (L)
CYL PG 25Hz IC206-16 5Vp-p
TRACKING M.M.V
F.F
REC CTL AMP
M.M.V.
COUNT DOWN
P.B AMP
IC206 (AN3792)
CYL FG IC206-1 5Vp-p PB/REC 150Hz CUE 153Hz REV 147Hz
CTL PULSE(REC) CTL PULSE(P.B) 25Hz 25Hz
IC207-2 5Vp-p 17KHz (50%-50% DUTY CYCLE AT SPECIFIC SPEED)
Ⓖ CAP FG FREQUENCY (COUNTED DOWN) PB/REC 378Hz CUE 1932Hz REV 1840Hz FF 2602Hz REW 2597Hz SLOW 290Hz
CAP MOTOR SPEED IS (INCREASED → MORE THAN 2.5V, NORMAL → D.C 2.5V, DECREASED → LESS THAN 2.5V)
CAP FG FREQUENCY PB/REC 756Hz CUE 3860Hz REV 3680Hz FF 5203Hz REW 5194Hz SLOW 580Hz
THE FALLING EDGE IS SHIFTED ACCORDING TO THE TRACKING VR.
4.43MHz COUNT DOWN
CAP PHASE LOOP
CAP SPEED LOOP
COUNT DOWN
MODE SWITCH
QR208
REF +2.8V
(IN FF/REW MODE, THE VOLTAGE IS FIXED.)
LPF
C203, C204
TP2004
IC207 (MN6178VAL)
Ⓗ TP2004 5Vp-p 4.33KHz (50%-50% DUTY CYCLE AT SPECIFIC SPEED)
IC201 (AN3795N)
1/2 COUNT DOWN
SCHMITT
GAIN CONTROL
AMP
C244
Q201
(THE ERROR VOLTAGE FROM IC201-12PIN IS CUTOFF BY Q201 SWITCHING ON IN SLOW MODE)
CO
CI
CAP REV (H)
D208
D-UNLOAD (H)
REC (H)
FF/REW (H)
D210, D211
FROM SYSTEM CONTROL CIRCUIT
D2001
CAP ON (L)
F-ADV (H)
SLOW/STILL (L)
CUE/REV (H)
D209
+5V
IC205 (BA8420) (SLOW/STILL DRIVE)
REV (H) STOP (H) FWD (L) INPUT
F-ADV (H)
CUE/REV (H) NORMAL (M) SLOW/STILL (L)
(THIS SIGNAL IS USED TO DECIDE THE CAPSTAN MOTOR BRAKE TIMING)
(IN SLOW MODE IT WORKS TO DECIDE THE CAPSTAN BRAKE TIMING BEING TRIGGERED BY PB CTL PULSE) MM6
(IN SLOW/STILL MODE THIS CIRCUIT WORKS TO MAKE V-LOCK PULSE.) MM1
HEAD AMP SW
ROTARY SW
V-LOCK
PB CTL PULSE
H.SW PULSE
(TO COMPENSATE SWAYING PICTURE, THE CYLINDER MOTOR IS CONTROLLED) HRIZONTAL SWAY
(THE ROTATION DIRECTION FOR THE CAPSTAN MOTOR IS CONTROLLED) REV (H) STOP (M) FOR (L) OUTPUT
(THIS SIGNAL CONTROLS THE CAPSTAN MOTOR IN SLOW MODE) FULL TORQUE
CURRENT LIMIT
VR2003 V-LOCK
QR205
"SERVO PACK" VJB02225
VR2008 SLOW TRACKING
VR2011 SLOW TRACKING FIX
QR2002
SS MOTOR OFF (L)
V-LOCK
ROTARY SW
H AMP SW
P201 10
P201 1
P201 4
P201 7
P201 8
P201 5
P201 9
P201 3
MOTOR DRIVE
DIFFERENTIAL AMPLIFIER
TORQUE CONTROL
CURRENT FEED BACK
D204
R227
P G
F G
POSITION SIGNAL PROCESS
IC203 (AN6387) (CYLINDER MOTOR DRIVE)
HEM
HEM
HES
HES
DD CYLINDER MOTOR
TP2015
CAPSTAN FG SIGNAL
FG HEAD
REFERENCE +2.8V
P6002 6
P6002 13
P6002 12
MOTOR CURRENT IS FED BACK TO THE TORQUE CONTROL
MOTOR DRIVE
UNREG +14V
IC2001 ① ③ ㉓ 2.2Vp-p
ERROR VOLTAGE
TORQUE CONTROL
DIFFERENTIAL AMPLIFIER
TP2020
R2005
R2006
CURRENT IN SLOW MODE 560mV
TORQUE DERECTION
TORQUE RIPPLE CANCELL
CAP REVERSE (H) CAP STOP (M) CAP FORWARD (L)
POSITION SIGNAL PROCESS
IC2001 (AN3821K) (CAPSTAN MOTOR DRIVE)
P6002 11
P6002 10
P6002 5
P6002 4
P6002 9
P6002 7
H3⁻
H3⁺
H2⁻
H2⁺
H1⁻
H1⁺
DD CAPSTAN MOTOR
5V
R2004
QR2001
DURING UNLOAD-2(H)
(TO WIND UP LOSENED TAPE, CAP TORQUE IS REDUCED BY THIS SIGNAL.)
STILL MODE
CUE/REV MODE
H.SW
V-LOCK
400 μsec
270μsec 140μsec 270μsec 140μsec
140μsec 140μsec 140μsec 140μsec
CYLINDER SERVO SPEED LOOP
CAPSTAN SERVO SPEED LOOP
CYLINDER SERVO PHASE LOOP
CAPSTAN SERVO PHASE LOOP

MODE / SERVO PACK	P.B	REC	CUE (X5)	REV (X5)	FF (X7)	REW (X7)	STILL
14 PIN	H	L	H	H	H	H	L
16 PIN	L	H	H	H	H	H	L
8 PIN	L	L	L	H	L	H	L

3-4. POWER SUPPLY SCHEMATIC DIAGRAM



⚠ POWER TRANSFORMER C.B.A. (VEP01213B)
⚠ POWER SUPPLY SECTION in MAIN C.B.A (VEP03336B)
C1105 0.022
C1106 0.022
P1101
AC 5.2 V
AC 5.2 V
AC 10.5V
AC 10.5V
GND
GND
REG -29V
NON SW 12V
UNREG 18V
UNREG 45V
R1104 10
Q1101 2SA684 (REG)
-30.7
-48.0
-30.2
D1105 MA4300-L
C1103 100V47
C1104 100V47
R1101 5600
D1104 11E2
D1103 11E2
Q1102 2SD1275 (REG)
17.7
11.8
12.9
C1101 16V10
C1102 35V3300
R1102 1500
D1101 MA4130M
D1102 10E1
C1107 0.022
R1103 8.2 ⚠
F1102 T2.0A ⚠
F1103 T2.0A ⚠
AC10.5V
AC10.5V
AC38V
AC14.5V
GND
AC4V
AC4V
T1101 ⚠ VTP0187
⚠ AC IN
F1101 T400mA ⚠
L1101 VTQ0046 100μ 100μ
L1102 VTQ0047 200μ 200μ
(TO TUNER & TV DEMO.) P1102
GND 1 P1002-1
GND 2 P1002-2
P1001
D1001
D1002
D1003
D1004
11E1×4 or ERA15-01
C1001 25V3300
UNREG 45V
NON SW 12V
AC 5.2 V
AC 5.2 V
REG -29V
UNREG 14V
MOTOR GND
R1001 1800 (1/2W)
C1002 35V100
POWER TR. Ⓒ
POWER TR. Ⓔ
POWER TR. Ⓑ
IC1001 STK5331
17.7
13.5
12.3
20.6
7.2
6.0
11.9
TO TV DEMODULATOR
TUNER 12V Ⓛ
D1010 MA165
QR1001 UN1211
13.5
10.6
C1005 10V100
R1008 4700
R1005 4700
TO SYSTEM CONTROL
POWER OFF Ⓛ
REG 6V
EX REC +B
CYLINDER HEATER C.B. (VJB00G15)
Q1501 2SD1275 (REG)
7.2
12.6
6.0
Q1002 2SD1275
R1003 10K
R1002 6800
D1006 MA165
(12V REG)
17.7
12.2
R1006 4700
C1006 0.01
13.3
D1007 MA165
C1004 16V10
D1008 MA4130H
C1003 16V100
D1005 11E1 or ERA15-01
5.2
5.1
Q1001 2SC1384 (5V REG)
TP1002
R1004 5600
5.8
TO SERVO
REG 5 V
REG 12.3V
TP1001
D1009 11E1 or ERA15-01
Q1003 2SC1384 (5V REG)
5.2
5.1
5.8
R1007 5600
TO VIDEO
REG 5V
TO SYSTEM CONTROL
REG 12V

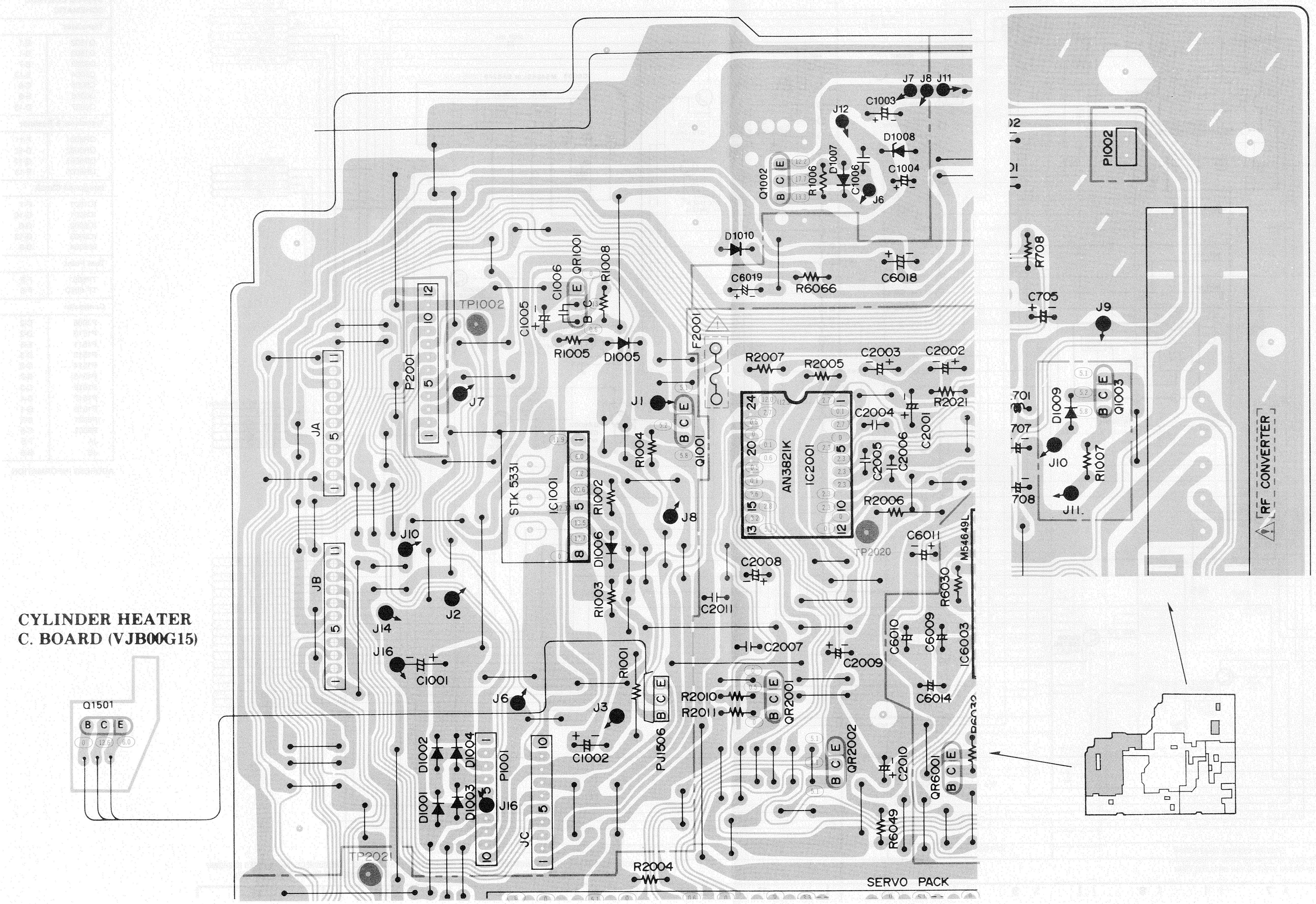
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

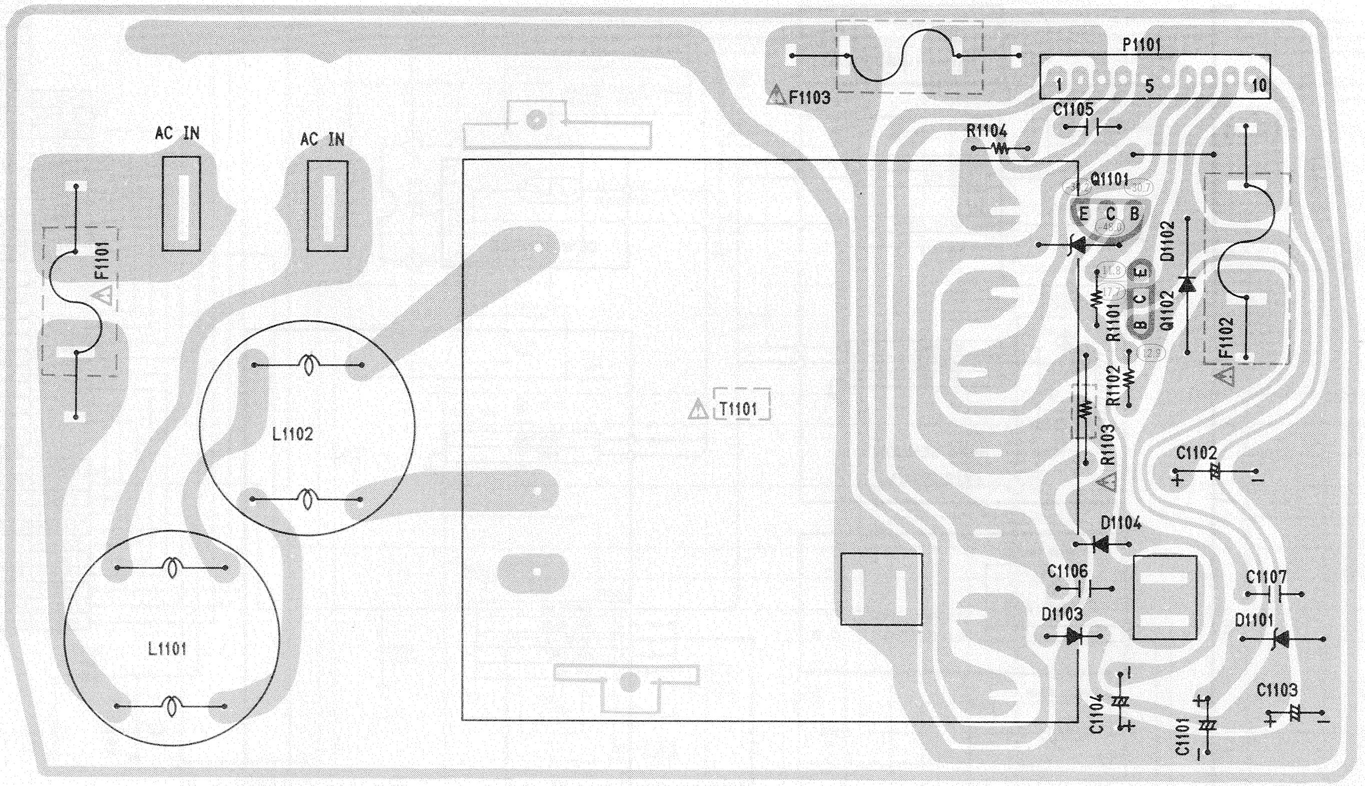
NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE
SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

Back Page:
SERVO Section

3-5. POWER SUPPLY Section In Main Circuit Board (VEP03336B)

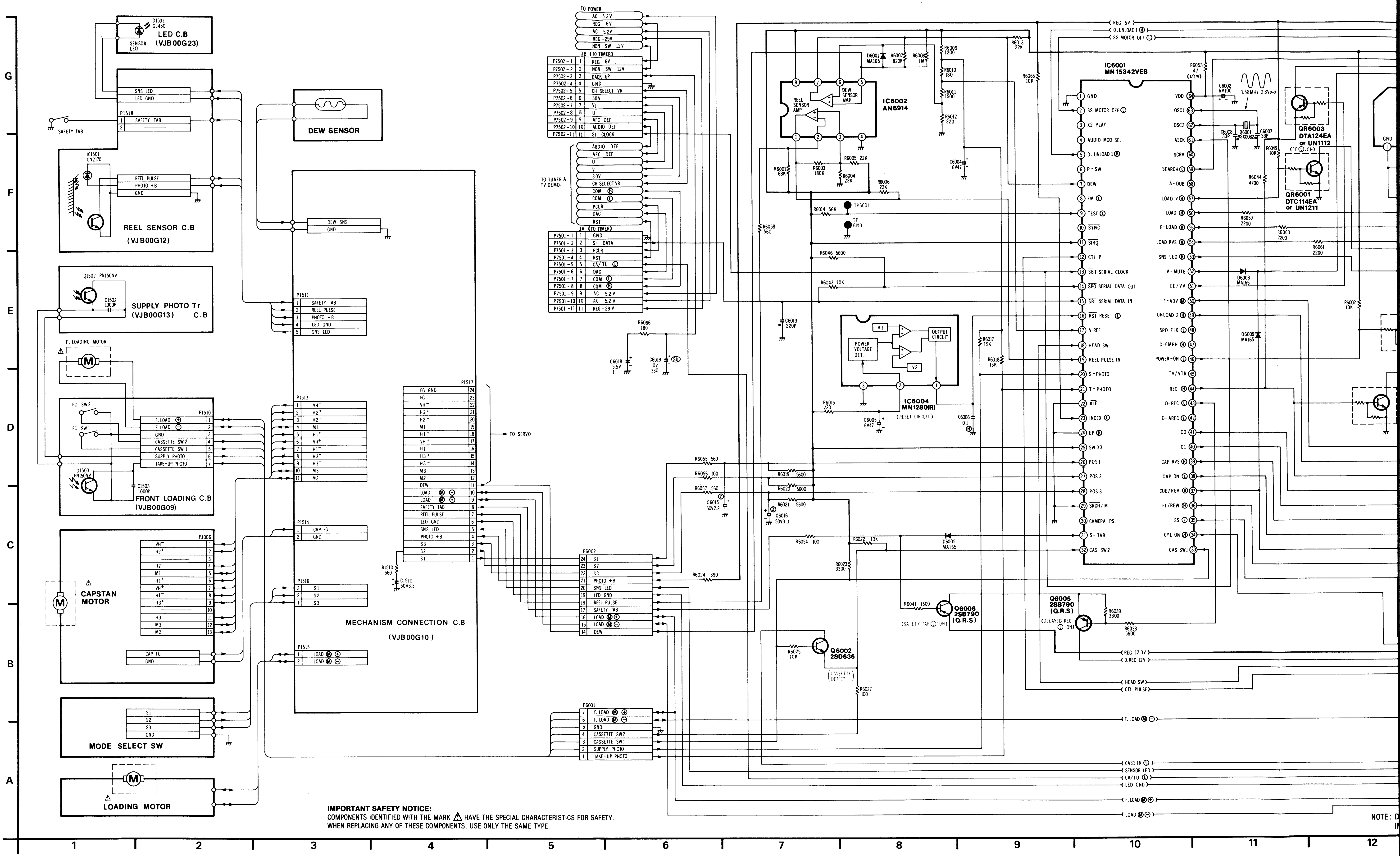

CYLINDER HEATER C. BOARD (VJB00G15)
Q1501
B C E
J7 J8 J11
C1003
J12
D1008
D1007
R1006
C1006
C1004
Q1002
J6
D1010
C6019
R6066
C6018
C1005
C1006
QR1001
R1008
TP1002
P2001
R1005
D1005
F2001
R2007
R2005
C2003
C2002
J1
Q1001
R1004
AN3821K
IC2001
C2004
R2021
C2005
C2006
C2001
JA
J7
STK 5331
IC1001
R1002
J8
R2006
TP2020
C6011
M54649L
D1006
R1003
C2008
C2011
R6030
J10
JB
J2
J14
J16
C1001
R1001
C2007
C2009
C6010
C6009
IC6003
C6014
J6
J3
PJ1506
R2010
R2011
QR2001
QR2002
C2010
QR6001
R6032
D1002
D1004
D1001
D1003
P1001
J16
C1002
JC
R6049
TP202
R2004
SERVO PACK
P1002
R708
C705
J9
701
707
D1009
Q1003
J10
R1007
708
J11
RF CONVERTER

3-6. POWER TRANSFORMER CIRCUIT BOARD (VEP01213B)

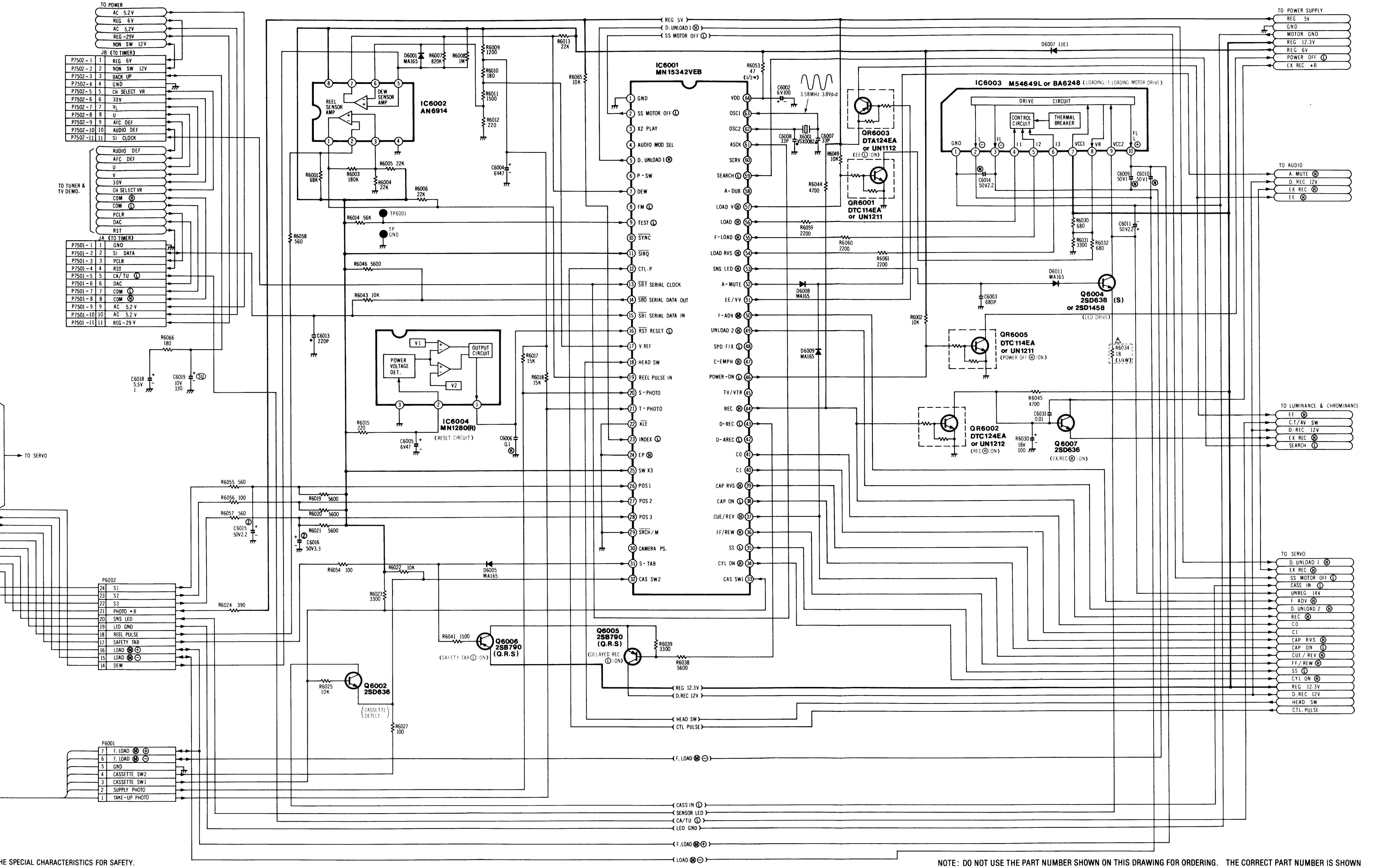

F1103
P1101
1
5
10
C1105
R1104
AC IN
AC IN
F1101
Q1101
-31.2
-30.7
E C B
-48.0
D1102
11.8
17.7
E C B
R1101
Q1102
12.9
F1102
L1102
T1101
R1102
R1103
C1102
D1104
C1106
C1107
D1103
D1101
L1101
C1104
C1101
C1103

Next Page:
SYSTEM CONTROL Section

3-7. SYSTEM CONTROL SCHEMATIC DIAGRAM


LED C.B (VJB00G23)
D1501 GL450
SENSOR LED
SAFETY TAB
P1518
REEL SENSOR C.B (VJB00G12)
IC1501 ON2170
REEL PULSE
PHOTO +B
SNS LED
LED GND
SUPPLY PHOTO Tr C.B (VJB00G13)
Q1502 PN150NV
C1502 1000P
F. LOADING MOTOR
FC SW2
FC SW1
P1510
F. LOAD ⊕
F. LOAD ⊖
GND
CASSETTE SW2
CASSETTE SW1
SUPPLY PHOTO
TAKE-UP PHOTO
Q1503 PN150NV
C1503 1000P
FRONT LOADING C.B (VJB00G09)
CAPSTAN MOTOR
PJ006
CAP FG
MODE SELECT SW
S1
S2
S3
LOADING MOTOR
DEW SENSOR
DEW SNS
P1511
P1513
P1514
P1515
P1516
P1517
MECHANISM CONNECTION C.B (VJB00G10)
R1510 560
C1510 50V3.3
TO SERVO
TO POWER
AC 5.2V
REG 6V
AC 5.2V
REG -29V
NON SW 12V
JB (TO TIMER)
P7502
JA (TO TIMER)
P7501
TO TUNER & TV DEMO.
AUDIO DEF
AFC DEF
CH SELECT VR
SI CLOCK
SI DATA
PCLR
RST
CA/TU
DAC
COM
R6066 180
C6018 5.5V 1
C6019 10V 330
P6002
P6001
IC6002 AN6914
REEL SENSOR AMP
DEW SENSOR AMP
D6001 MA165
R6007 820K
R6008 1M
R6009 1200
R6010 180
R6011 1500
R6012 220
R6013 22K
R6065 10K
R6001 68K
R6003 180K
R6005 22K
R6004 22K
R6006 22K
C6004 6V47
R6014 56K
TP6001
TP GND
R6058 560
R6046 5600
R6043 10K
C6013 220P
IC6004 MN1280(R) (RESET CIRCUIT)
POWER VOLTAGE DET.
OUTPUT CIRCUIT
R6015 220
C6005 6V47
C6006 0.1
R6017 15K
R6018 15K
R6055 560
R6056 100
R6057 560
C6015 50V2.2
R6019 5600
R6020 5600
R6021 5600
C6016 50V3.3
R6054 100
R6022 10K
D6005 MA165
R6023 3300
R6024 390
R6041 1500
Q6006 2SB790 (Q.R.S) (SAFETY TAB Ⓛ:ON)
Q6005 2SB790 (Q.R.S) (DELAYED REC Ⓛ:ON)
R6039 3300
R6038 5600
Q6002 2SD636 (CASSETTE DETECT)
R6025 10K
R6027 100
IC6001 MN15342VEB
R6053 47 (1/2W)
C6002 6V100
3.58MHz 3.8Vp-p
C6008 33P
X6001 CSA3.58MHz
C6007 33P
R6049 10K
QR6003 DTA124EA or UN1112 (EE Ⓛ:ON)
QR6001 DTC114EA or UN1211
R6044 4700
R6059 2200
R6060 2200
R6061 2200
D6008 MA165
R6002 10K
D6009 MA165
REG 5V
D. UNLOAD 1 Ⓗ
SS MOTOR OFF Ⓛ
REG 12.3V
D.REC 12V
HEAD SW
CTL PULSE
F. LOAD Ⓜ ⊖
CASS IN Ⓛ
SENSOR LED
CA/TU Ⓛ
LED GND
F.LOAD Ⓜ ⊕
LOAD Ⓜ ⊖
GND
NOTE: D
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.


TO POWER
AC 5.2V
REG 6V
AC 5.2V
REG -29V
NON SW 12V
JB (TO TIMER)
P7502-1 REG 6V
P7502-2 NON SW 12V
P7502-3 BACK UP
P7502-4 GND
P7502-5 CH SELECT VR
P7502-6 30V
P7502-7 VL
P7502-8 U
P7502-9 AFC DEF
P7502-10 AUDIO DEF
P7502-11 SI CLOCK
TO TUNER & TV DEMO.
AUDIO DEF
AFC DEF
U
V
30V
CH SELECT VR
COM Ⓗ
COM Ⓛ
PCLR
DAC
RST
JA (TO TIMER)
P7501-1 GND
P7501-2 SI DATA
P7501-3 PCLR
P7501-4 RST
P7501-5 CA/TU Ⓛ
P7501-6 DAC
P7501-7 COM Ⓛ
P7501-8 COM Ⓗ
P7501-9 AC 5.2V
P7501-10 AC 5.2V
P7501-11 REG -29V
TO SERVO
IC6001
MN15342VEB
IC6002
AN6914
REEL SENSOR AMP
DEW SENSOR AMP
IC6003 M54649L or BA6248 (LOADING/F.LOADING MOTOR DRIVE)
DRIVE CIRCUIT
CONTROL CIRCUIT
THERMAL BREAKER
IC6004
MN1280(R)
(RESET CIRCUIT)
POWER VOLTAGE DET.
OUTPUT CIRCUIT
QR6001 DTC114EA or UN1211
QR6002 DTC124EA or UN1212 (REC Ⓗ:ON)
QR6003 DTA124EA or UN1112 (EE Ⓛ:ON)
QR6005 DTC114EA or UN1211 (POWER OFF Ⓗ:ON)
Q6002 2SD636 (CASSETTE DETECT)
Q6004 2SD638 (S) or 2SD1458 (LED DRIVE)
Q6005 2SB790 (Q.R.S) (DELAYED REC Ⓛ:ON)
Q6006 2SB790 (Q.R.S) (SAFETY TAB Ⓛ:ON)
Q6007 2SD636 (EX.REC Ⓗ:ON)
TP6001
TP GND
X6001 VSX0082
3.58MHz 3.8Vp-p
P6002
24 S1
23 S2
22 S3
21 PHOTO +B
20 SNS LED
19 LED GND
18 REEL PULSE
17 SAFETY TAB
16 LOAD Ⓜ⊕
15 LOAD Ⓜ⊖
14 DEW
P6001
7 F. LOAD Ⓜ⊕
6 F. LOAD Ⓜ⊖
5 GND
4 CASSETTE SW2
3 CASSETTE SW1
2 SUPPLY PHOTO
1 TAKE-UP PHOTO
TO POWER SUPPLY
REG 5V
GND
MOTOR GND
REG 12.3V
REG 6V
POWER OFF Ⓛ
EX REC +B
TO AUDIO
A. MUTE Ⓗ
D. REC 12V
EX REC Ⓗ
EE Ⓗ
TO LUMINANCE & CHROMINANCE
EE Ⓗ
C.T/AV SW
D. REC 12V
EX REC Ⓗ
SEARCH Ⓛ
TO SERVO
D. UNLOAD 1 Ⓗ
EX REC Ⓗ
SS MOTOR OFF Ⓛ
CASS IN Ⓛ
UNREG 14V
F ADV Ⓗ
D. UNLOAD 2 Ⓗ
REC Ⓗ
C0
C1
CAP RVS Ⓗ
CAP ON Ⓛ
CUE/REV Ⓗ
FF/REW Ⓗ
SS Ⓛ
CYL ON Ⓗ
REG 12.3V
D.REC 12V
HEAD SW
CTL PULSE
5
6
7
8
9
10
11
12
13
14
15

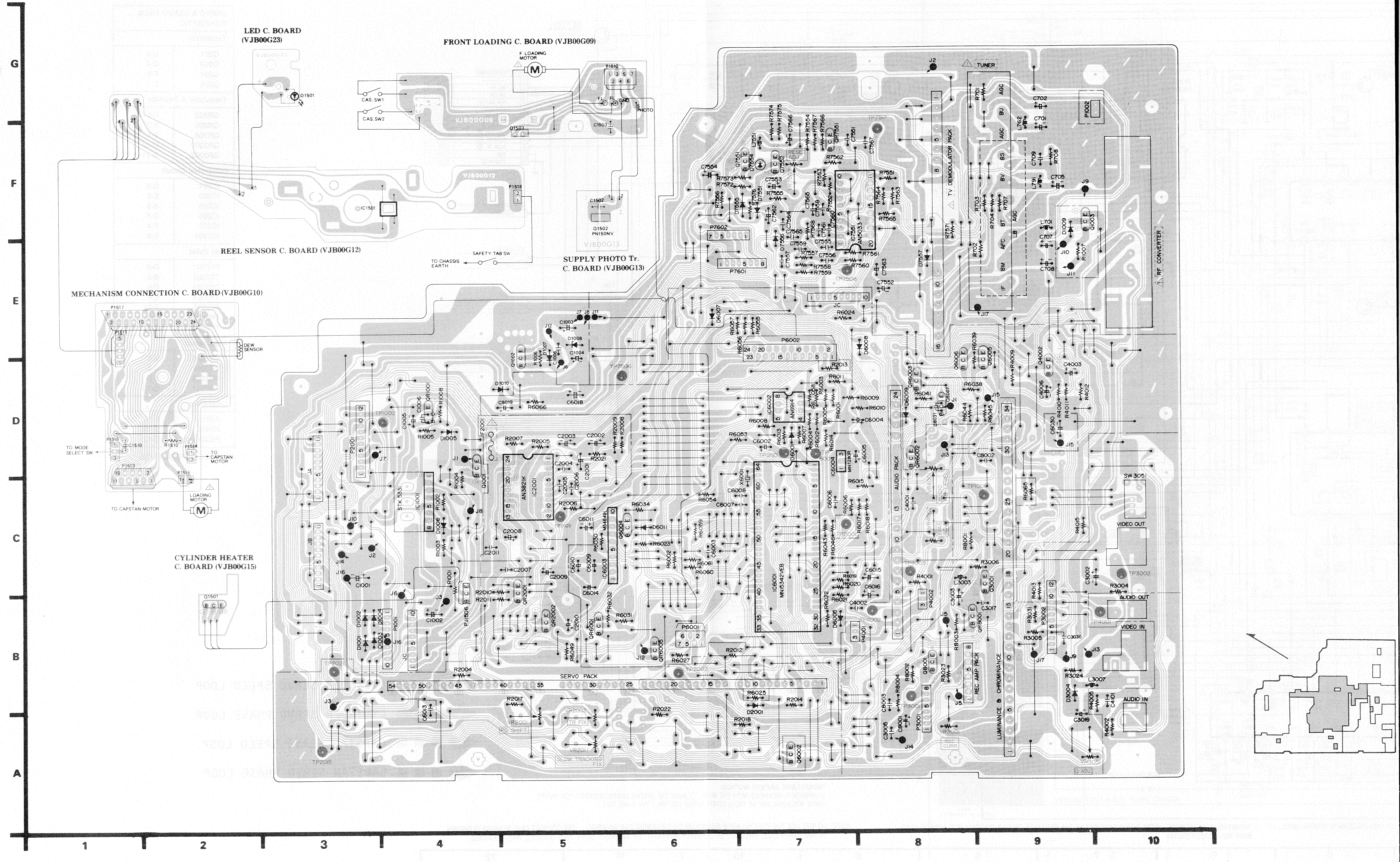
HE SPECIAL CHARACTERISTICS FOR SAFETY.
NLY THE SAME TYPE.

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

SYSTEM CONTROL SCHEMATIC	
Transistor	
Q1502	E-1
Q1503	D-1
Q6002	B-7
Q6004	E-13
Q6005	C-9
Q6006	B-9
Q6007	D-13
Transistor & Resistor	
QR6001	F-11
QR6002	D-12
QR6003	G-12
QR6005	E-13
Integrated Circuit	
IC1501	F-1
IC6001	G-10
IC6002	G-8
IC6003	G-12
IC6004	D-8
Test Point	
TP6001	F-8
TP GND	F-8
Connector	
PJ006	C-2
P1510	D-2
P1511	E-3
P1513	D-3
P1514	C-3
P1515	B-3
P1516	C-3
P1517	D-4
P1518	G-1
P6001	B-5
P6002	C-5
JA	F-5
JB	G-5

ADDRESS INFORMATION

3-8. SYSTEM CONTROL Section In Main Circuit Board (VEP03336B)


LED C. BOARD (VJB00G23)
FRONT LOADING C. BOARD (VJB00G09)
F. LOADING MOTOR
CAS. SW1
CAS. SW2
REEL SENSOR C. BOARD (VJB00G12)
SAFETY TAB SW
TO CHASSIS EARTH
SUPPLY PHOTO Tr. C. BOARD (VJB00G13)
MECHANISM CONNECTION C. BOARD (VJB00G10)
DEW SENSOR
TO MODE SELECT SW
TO CAPSTAN MOTOR
LOADING MOTOR
CYLINDER HEATER C. BOARD (VJB00G15)
TUNER
TV DEMODULATOR PACK
RF CONVERTER
SERVO PACK
AUDIO PACK
LUMINANCE & CHROMINANCE
REC AMP PACK
SW3051
VIDEO OUT
AUDIO OUT
VIDEO IN
AUDIO IN
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10

SYSTEM CONTROL ICs VOLTAGE CHART

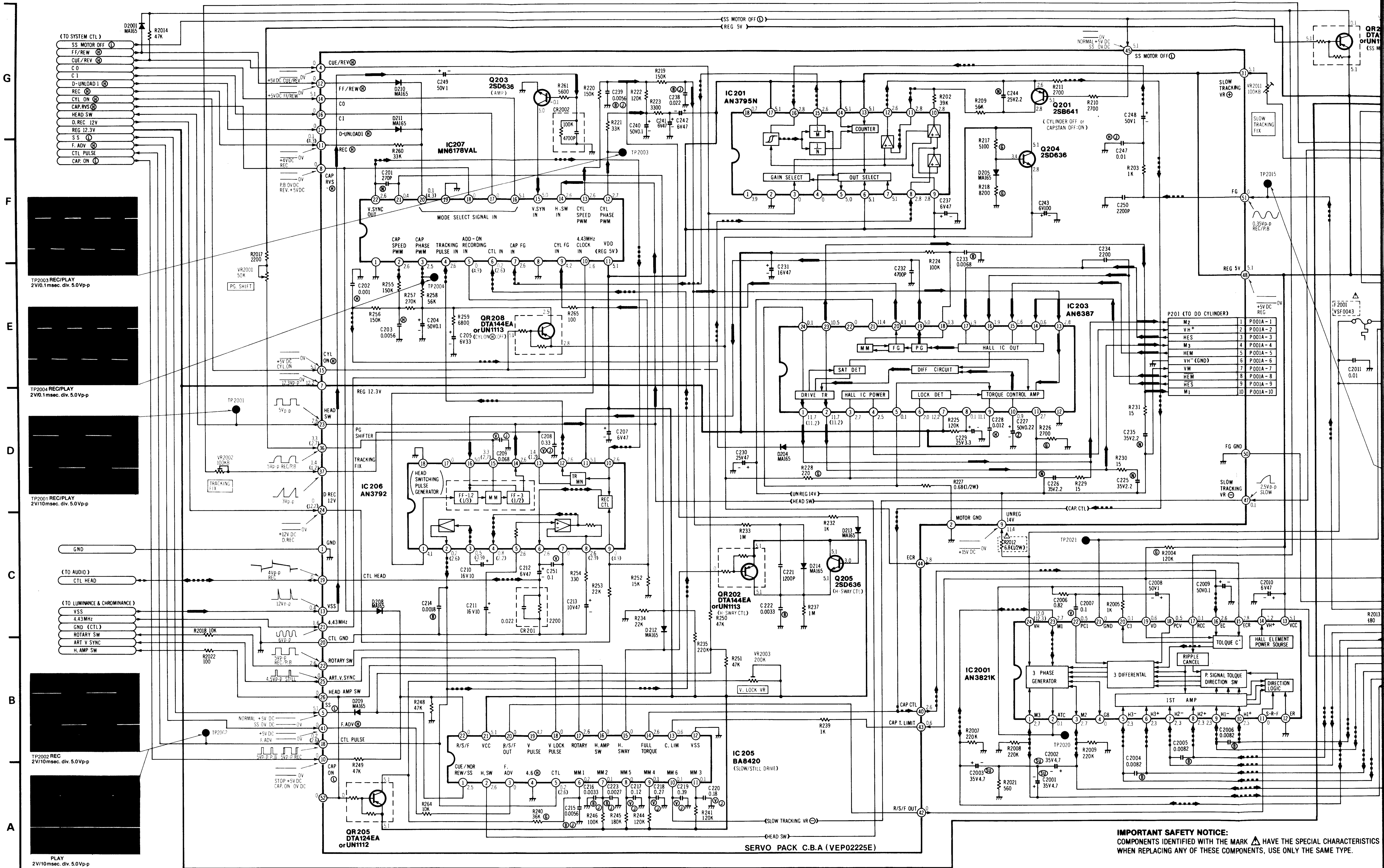
REF. NO.	IC6001																			
MODE	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
STOP	0	0	5.1	0	0	5.1	0	5.1	5.2	3.9	5.3	0.1	4.8	4.8	4.6	5.3	2.9	0	5.0	3.2
PLAY	0	5.1	5.1	0	0	5.1	0	5.1	5.2	3.9	5.3	0.3	4.7	4.8	4.6	5.3	2.9	1.9	5.0	3.2
REC	0	5.1	5.1	0	0	5.1	0	5.1	5.2	3.9	5.3	3.3	4.7	4.8	4.6	5.3	2.9	3.3	5.0	3.2
F.F	0	0.1	5.1	0	0	5.1	0	5.1	5.1	3.9	5.3	0.1	4.7	4.8	4.6	5.3	2.9	5.1	2.5	3.2
REW	0	0.1	5.1	0	0	5.1	0	5.1	5.1	3.8	5.3	0.1	4.7	4.8	4.6	5.3	2.9	5.1	2.5	3.2
REF. NO.	IC6001																			
MODE	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
STOP	3.2	0	5.1	0	5.3	5.3	0.1	5.3	0	5.1	1.3	1.6	4.6	0	5.1	0	0	5.1	0	0
PLAY	3.2	0	5.1	0	5.3	5.3	5.3	0.5	0	5.1	1.3	1.6	4.6	5.1	5.1	0	0	0	0	0
REC	3.2	0	5.1	0	5.3	5.3	5.3	0.5	0	5.1	1.3	1.6	4.6	5.1	5.1	0	0	0	0	0
F.F	3.2	0	5.1	0	5.3	0.5	5.3	0.5	0	5.1	1.3	1.6	4.6	0	5.1	5.1	0	0	0	5.1
REW	3.2	0	5.1	0	5.3	0.5	5.3	0.5	0	5.1	1.3	1.6	4.6	0	5.1	5.1	0	0	5.0	5.1
REF. NO.	IC6001																			
MODE	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60
STOP	0	0.8	12.2	0.1	0.9	0.1	0	5.1	0	0	0	0	0	0	0	0	5.0	0	5.1	5.1
PLAY	5.1	0.8	12.1	0.1	0	0.1	0	5.1	0	0	5.1	0	0.6	0	0	0	5.0	0	5.1	5.1
REC	5.1	0	0.3	4.3	0.9	0.1	0	5.1	0	0	0.1	0	0.6	0	0	0	5.0	0	5.1	5.1
F.F	5.1	0.7	12.1	0.2	1.4	0.1	0	5.1	0	0	0	0	0.6	0	0	0	4.9	0	5.1	5.1
REW	5.1	0.6	12.1	0.2	0.6	0.1	0	5.1	0	0	0	0	0.6	0	0	0	4.9	0	5.1	5.1
REF. NO.	IC6001										IC6002									
MODE	61	62	63	64							1	2	3	4	5	6	7	8		
STOP	4.8	1.9	2.0	5.1							5.0	0.3	2.8	0	0	0.4	0	5.3		
PLAY	4.8	1.9	2.0	5.1							5.0	3.3	2.6	0	0	0.4	0	5.3		
REC	4.8	2.0	2.0	5.1							5.0	3.3	2.6	0	0	0.4	0	5.3		
F.F	4.8	1.9	2.0	5.1							2.8	2.4	2.7	0	0	0.4	0	5.3		
REW	4.7	1.9	2.0	5.1							2.8	2.4	2.7	0	0	0.4	0	5.3		
REF. NO.	IC6003												IC6004							
MODE	1	2	3	4	5	6	7	8	9	10			1	2	3					
STOP	0	0.6	0.6	0	0	0	12.2	5.5	12.8	0.6			5.3	5.3	0					
PLAY	0	0.6	0.6	0	0	0	12.2	5.5	12.1	0.6			5.3	5.3	0					
REC	0	0.6	0.6	0	0	0	12.2	5.6	12.1	0.6			5.3	5.3	0					
F.F	0	0.6	0.6	0	0	0	12.2	5.5	12.2	0.6			5.3	5.3	0					
REW	0	0.6	0.6	0	0	5.0	12.2	5.6	12.7	0.6			5.3	5.3	0					

SYSTEM CONTROL TRANSISTORs VOLTAGE CHART

REF. NO.	Q6002			Q6004			Q6005			Q6006			Q6007					
MODE	E	C	B	E	C	B	E	C	B	E	C	B	E	C	B			
STOP	1.6	1.7	2.3	0.1	12.8	0.5	12.2	0	12.1	12.2	12.2	11.4	5.1	5.2	5.9			
PLAY	1.6	1.7	2.3	0.7	12.2	1.0	12.2	0	12.2	12.2	12.2	11.4	5.1	5.2	5.9			
REC	1.6	1.7	2.3	0.7	12.0	1.0	12.1	12.0	11.4	12.2	12.1	11.4	0	5.2	0			
F.F	1.6	1.7	2.3	0.6	12.6	1.2	12.2	0	12.2	12.2	12.2	11.4	5.1	5.2	5.9			
REW	1.6	1.7	2.3	0.6	12.5	1.0	12.2	0	12.2	12.2	12.2	11.4	5.0	5.2	5.9			
REF. NO.	QR6001			QR6002			QR6003			QR6005								
MODE	E	C	B	E	C	B	E	C	B	E	C	B						
STOP	0	0	5.0	0	5.9	0.1	5.1	5.1	0	0	13.3	0.1						
PLAY	0	0	5.0	0	5.9	0.1	5.1	0	5.1	0	13.3	0.1						
REC	0	0	5.0	0	0	4.3	5.1	5.1	0.1	0	13.3	0.1						
F.F	0	0	4.9	0	5.9	0.2	5.1	5.1	0	0	13.3	0.1						
REW	0	0	4.9	0	5.9	0.2	5.1	5.1	0	0	13.3	0.1						

Next Page:
SERVO Section

3-9. SERVO SCHEMATIC DIAGRAM

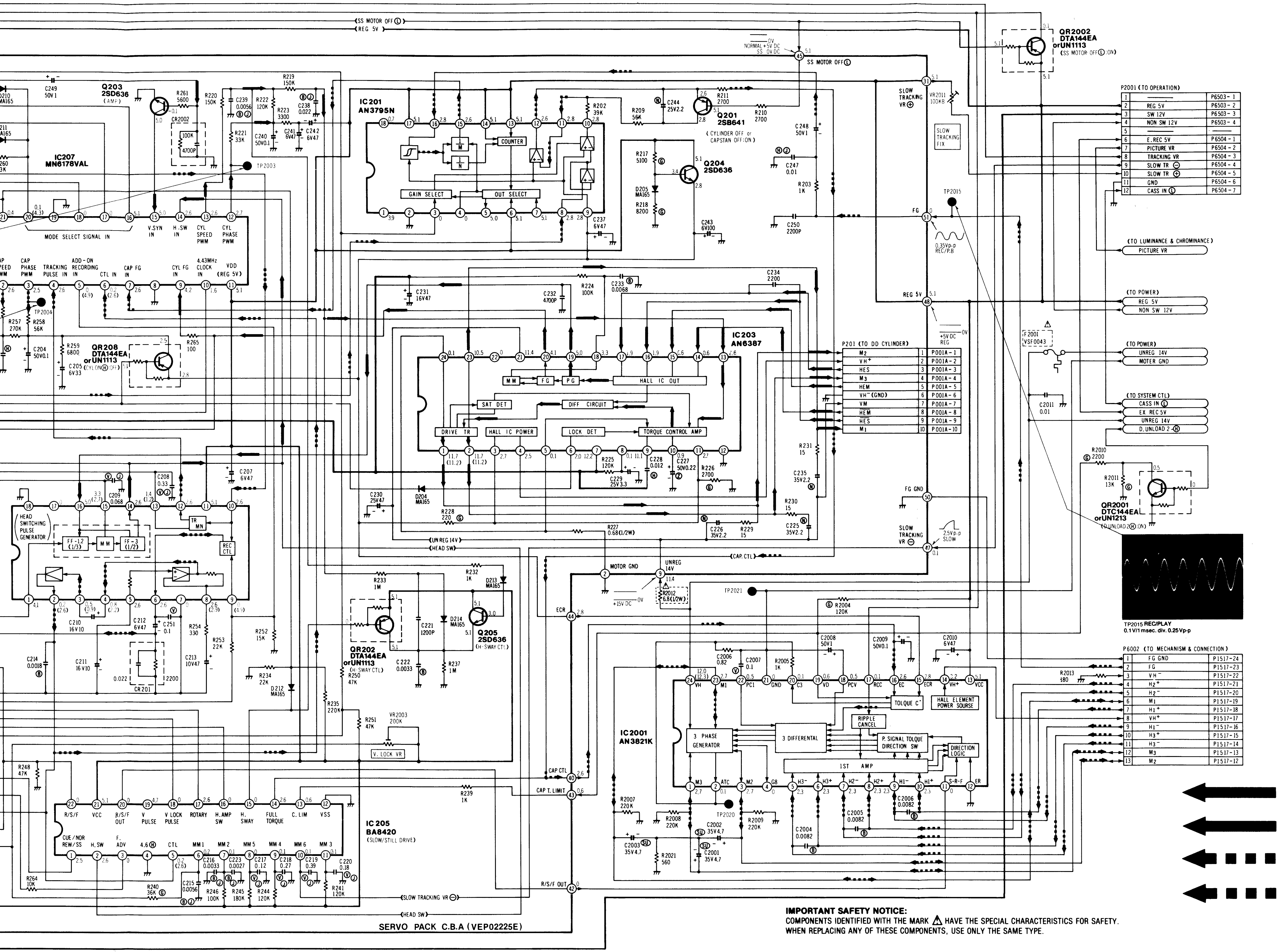

G
F
E
D
C
B
A
(TO SYSTEM CTL)
SS MOTOR OFF
FF/REW
CUE/REV
C0
C1
D-UNLOAD 1
REC
CYL ON
CAP.RVS
HEAD SW
D.REC 12V
REG 12.3V
S S
F. ADV
CTL PULSE
CAP. ON
GND
(TO AUDIO)
CTL HEAD
(TO LUMINANCE & CHROMINANCE)
VSS
4.43MHz
GND (CTL)
ROTARY SW
ART V SYNC
H. AMP SW
D2001 MA165
R2014 47K
TP2003 REC/PLAY 2V/0.1msec. div. 5.0Vp-p
TP2004 REC/PLAY 2V/0.1msec. div. 5.0Vp-p
TP2001 REC/PLAY 2V/10msec. div. 5.0Vp-p
TP2002 REC 2V/10msec. div. 5.0Vp-p
PLAY 2V/10msec. div. 5.0Vp-p
IC207 MN6178VAL
V.SYNC OUT
MODE SELECT SIGNAL IN
V.SYN IN
H.SW IN
CYL SPEED PWM
CYL PHASE PWM
CAP SPEED PWM
CAP PHASE PWM
TRACKING PULSE IN
ADD-ON RECORDING IN
CTL IN
CAP FG IN
CYL FG IN
4.43MHz CLOCK IN
VDD (REG 5V)
Q203 2SD636 (AMP)
QR208 DTA144EA or UN1113
R2017 2200
VR2001 50K
PG. SHIFT
TP2004
TP2003
IC201 AN3795N
GAIN SELECT
OUT SELECT
COUNTER
Q201 2SB641
(CYLINDER OFF or CAPSTAN OFF:ON)
Q204 2SD636
D205 MA165
SS MOTOR OFF
REG 5V
NORMAL +5V DC
SS 0V DC
SLOW TRACKING VR
VR2011 100KB
SLOW TRACKING FIX
TP2015
FG
0.35Vp-p REC/P.B
IC203 AN6387
MM
FG
PG
HALL IC OUT
SAT DET
DIFF CIRCUIT
DRIVE TR
HALL IC POWER
LOCK DET
TORQUE CONTROL AMP
P201 (TO DD CYLINDER)
M2
VH+
HES
M3
HEM
VH- (GND)
VM
HEM
HES
M1
P001A-1
P001A-2
P001A-3
P001A-4
P001A-5
P001A-6
P001A-7
P001A-8
P001A-9
P001A-10
+5V DC REG
F2001 VSF0043
C2011 0.01
FG GND
SLOW TRACKING VR
2.5Vp-p SLOW
REG 12.3V
HEAD SW
PG SHIFTER
TRACKING FIX
IC206 AN3792
HEAD SWITCHING PULSE GENERATOR
FF-1/2 (1/3)
M M
FF-3 (1/2)
TR
MN
REC CTL
D.REC 12V
+12V DC D.REC
CTL HEAD
VSS
4.43MHz
CTL GND
ROTARY SW
ART.V.SYNC
HEAD AMP SW
F.ADV
CTL PULSE
CAP ON
CR201
D208 MA165
D209 MA165
VR2002 100KB
TRACKING FIX
TP2001
TP2002
R2018 10K
R2022 100
QR202 DTA144EA or UN1113 (H.SWAY CTL)
Q205 2SD636 (H.SWAY CTL)
D213 MA165
D214 MA165
D212 MA165
D204 MA165
VR2003 200K
V. LOCK VR
(UN REG 14V)
(HEAD SW)
(CAP. CTL)
MOTOR GND
UNREG 14V
R2012 6.8(1/2W)
+15V DC
ECR
TP2021
CAP CTL
CAP T. LIMIT
R/S/F OUT
IC2001 AN3821K
3 PHASE GENERATOR
3 DIFFERENTIAL
RIPPLE CANCEL
P. SIGNAL TOLQUE DIRECTION SW
DIRECTION LOGIC
TOLQUE C
HALL ELEMENT POWER SOURSE
1ST AMP
TP2020
IC205 BA8420 (SLOW/STILL DRIVE)
R/S/F
VCC
R/S/F OUT
V PULSE
V LOCK PULSE
ROTARY SW
H.AMP SW
H. SWAY
FULL TORQUE
C.LIM
VSS
CUE/NOR REW/SS
H.SW
F. ADV
CTL
MM1
MM2
MM5
MM4
MM6
MM3
QR205 DTA124EA or UN1112
(SLOW TRACKING VR)
(HEAD SW)
SERVO PACK C.B.A (VEP02225E)
1
2
3
4
5
6
7
8
9
10
11

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS (   ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.
IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE


SS MOTOR OFF ①
REG 5V
SS MOTOR OFF ①
QR2002
DTA144EA
orUN1113
(SS MOTOR OFF ①:ON)
IC201
AN3795N
GAIN SELECT
OUT SELECT
COUNTER
Q203
2SD636
(AMP)
IC207
MN6178VAL
MODE SELECT SIGNAL IN
V.SYN IN
H.SW IN
CYL SPEED PWM
CYL PHASE PWM
CAP SPEED PWM
CAP PHASE PWM
TRACKING PULSE IN
ADD-ON RECORDING CTL IN
CAP FG IN
CYL FG IN
4.43MHz CLOCK IN
VDD (REG 5V)
Q201
2SB641
(CYLINDER OFF or CAPSTAN OFF:ON)
Q204
2SD636
TP2003
TP2004
TP2015
SLOW TRACKING VR ⊕
SLOW TRACKING FIX
FG
REG 5V
QR208
DTA144EA
orUN1113
(CYL ON ⓗ OFF)
IC203
AN6387
MM
FG
PG
HALL IC OUT
SAT DET
DIFF CIRCUIT
DRIVE TR
HALL IC POWER
LOCK DET
TORQUE CONTROL AMP
P2001 (TO OPERATION)
1 — P6503-1
2 REG 5V P6503-2
3 SW 12V P6503-3
4 NON SW 12V P6503-4
5 —
6 E.REC 5V P6504-1
7 PICTURE VR P6504-2
8 TRACKING VR P6504-3
9 SLOW TR ⊖ P6504-4
10 SLOW TR ⊕ P6504-5
11 GND P6504-6
12 CASS IN ① P6504-7
(TO LUMINANCE & CHROMINANCE)
PICTURE VR
(TO POWER)
REG 5V
NON SW 12V
P201 (TO DD CYLINDER)
1 M2 P001A-1
2 VH+ P001A-2
3 HES P001A-3
4 M3 P001A-4
5 HEM P001A-5
6 VH- (GND) P001A-6
7 VM P001A-7
8 HEM P001A-8
9 HES P001A-9
10 M1 P001A-10
F2001 VSF0043
(TO POWER)
UNREG 14V
MOTER GND
(TO SYSTEM CTL)
CASS IN ①
EX REC 5V
UNREG 14V
D.UNLOAD 2 ⓗ
QR2001
DTC144EA
orUN1213
(D.UNLOAD 2 ⓗ :ON)
FG GND
SLOW TRACKING VR ⊖
2.5Vp-p SLOW
0.35Vp-p REC/P.B
TP2015 REC/PLAY
0.1V/1msec. div. 0.25Vp-p
HEAD SWITCHING PULSE GENERATOR
FF-1/2 (1/3)
MM
FF-3 (1/2)
TR MN
REC CTL
MOTOR GND
UNREG 14V
(UNREG 14V)
(HEAD SW)
(CAP.CTL)
QR202
DTA144EA
orUN1113
(H.SWAY CTL)
Q205
2SD636
(H.SWAY CTL)
TP2021
ECR
CAP CTL
CAP T. LIMIT
R/S/F OUT
V. LOCK VR
IC205
BA8420
(SLOW/STILL DRIVE)
R/S/F
VCC
R/S/F OUT
V PULSE
V LOCK PULSE
ROTARY SW
H.AMP SW
H. SWAY
FULL TORQUE
C.LIM
VSS
CUE/NOR REW/SS
H.SW
F. ADV
CTL
MM1
MM2
MM5
MM4
MM6
MM3
(SLOW TRACKING VR ⊖)
(HEAD SW)
SERVO PACK C.B.A (VEP02225E)
IC2001
AN3821K
3 PHASE GENERATOR
3 DIFFERENTAL
TOLQUE C'
HALL ELEMENT POWER SOURSE
RIPPLE CANCEL
P. SIGNAL TOLQUE DIRECTION SW
DIRECTION LOGIC
1ST AMP
TP2020
P6002 (TO MECHANISM & CONNECTION)
1 FG GND P1517-24
2 FG P1517-23
3 VH- P1517-22
4 H2+ P1517-21
5 H2- P1517-20
6 M1 P1517-19
7 H1+ P1517-18
8 VH+ P1517-17
9 H1- P1517-16
10 H3+ P1517-15
11 H3- P1517-14
12 M3 P1517-13
13 M2 P1517-12

SERVO & SERVO PACK SCHEMATIC	
Transistor	
Q201	G-9
Q203	G-4
Q204	F-9
Q205	C-7
Transistor & Resistor	
QR202	C-6
QR205	A-3
QR208	E-4
QR2001	D-12
QR2002	G-11
Integrated Circuit	
IC201	G-6
IC203	E-9
IC205	B-6
IC206	D-3
IC207	F-4
IC2001	B-8
Test Point	
TP2001	D-2
TP2002	B-2
TP2003	F-5
TP2004	E-4
TP2015	F-11
TP2020	B-9
TP2021	C-9
Adjustment	
VR2001	E-2
VR2002	D-2
VR2003	B-6
VR2011	G-10
Connector	
P201	E-10
P2001	G-12
P6002	C-12

ADDRESS INFORMATION

⬅ CYLINDER SERVO SPEED LOOP

⬅ CYLINDER SERVO PHASE LOOP

⬅ ■ ■ ■ CAPSTAN SERVO SPEED LOOP

⬅ ■ ■ ■ CAPSTAN SERVO PHASE LOOP

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

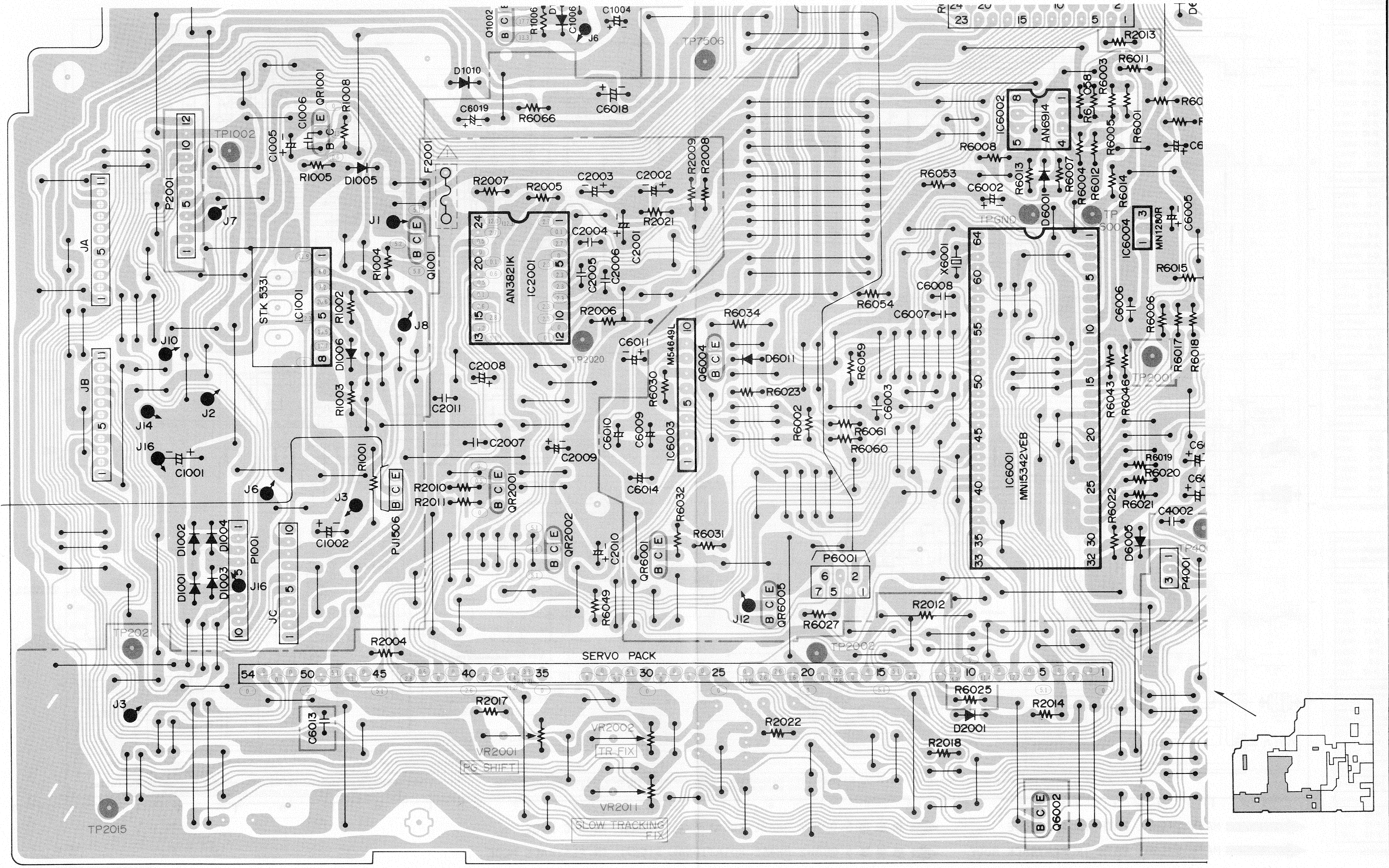
VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

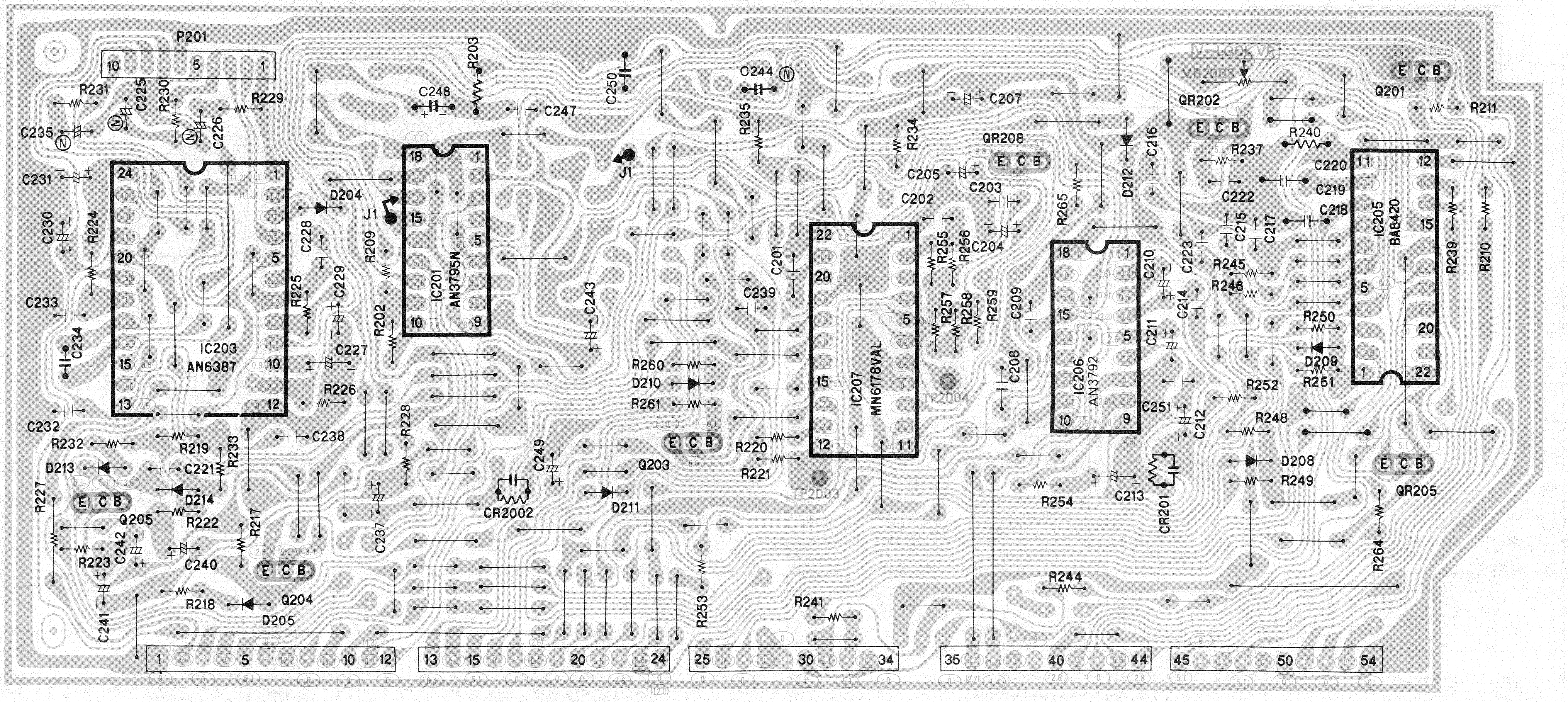
4 5 6 7 8 9 10 11 12

3-10. SERVO Section In Main Circuit Board (VEP03336B)

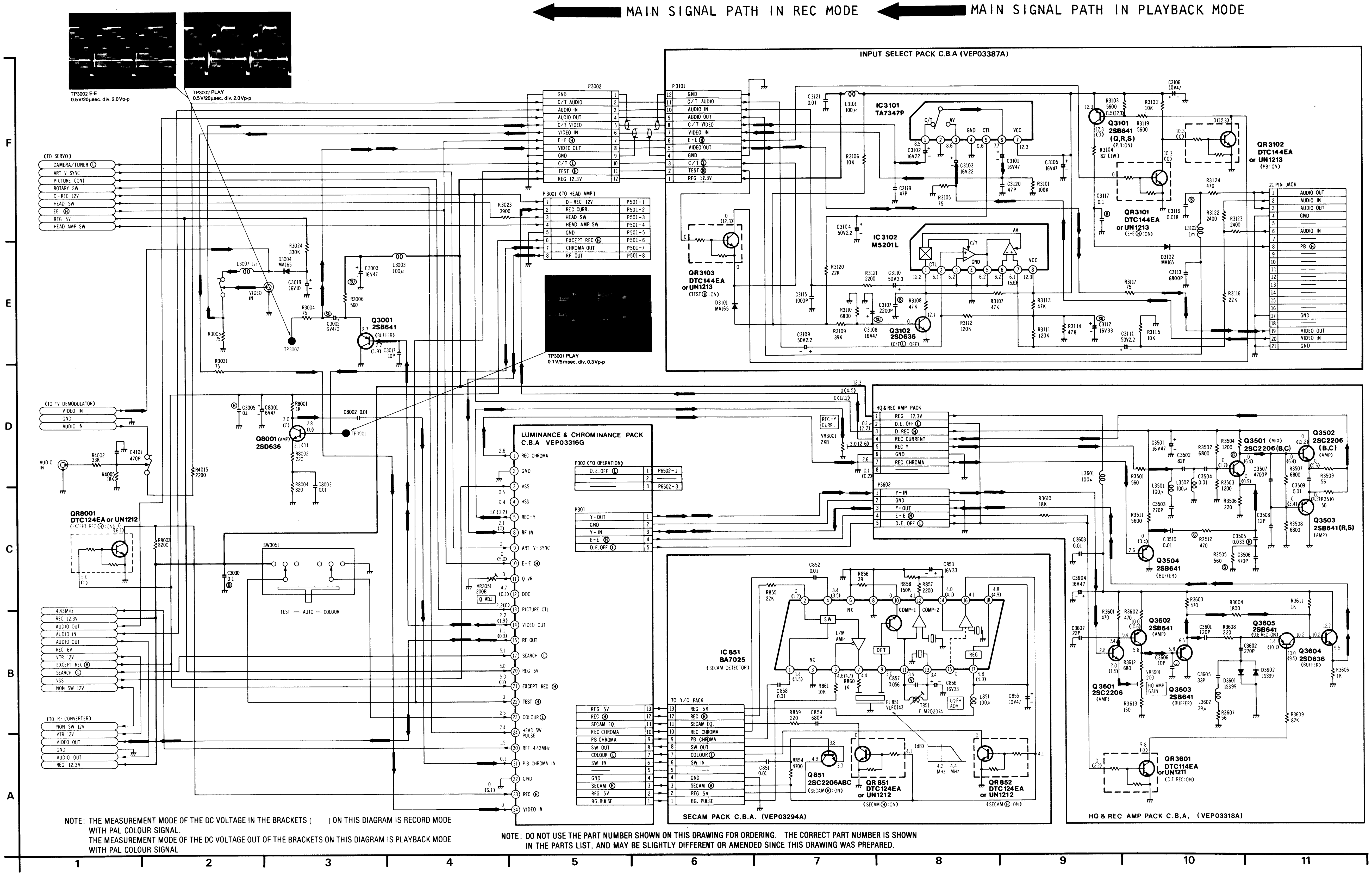


Q1002
R1006
C1006
C1004
J6
D1010
C6019
R6066
C6018
TP7506
QR1001
R1008
C1005
TP1002
P2001
R1005
D1005
F2001
R2007
R2005
C2003
C2002
R2009
R2008
J7
J1
Q1001
R1004
AN3821K
IC2001
C2004
C2001
R2021
C2005
C2006
R2006
TP2020
JA
STK 5331
IC1001
R1002
J8
D1006
R1003
J10
JB
J2
J14
C2008
C2011
C2007
C2009
J16
C1001
J6
J3
R1001
PJ1506
R2010
R2011
QR2001
QR2002
C1002
D1002
D1004
P1001
D1001
D1003
J16
JC
C2010
C6011
R6030
M54649L
IC6003
Q6004
D6011
R6034
R6023
C6010
C6009
C6014
R6032
R6031
QR6001
R6049
R6002
R6061
R6060
R6059
C6003
R6054
C6007
C6008
X6001
R6053
C6002
TPGND
R6013
R6007
D6001
R6008
IC6002
AN6914
R6004
R6012
R6005
R6014
R6001
R6003
TP5004
IC6004
MN1280R
C6005
R6011
R2013
R6015
C6006
R6006
R6017
R6018
TP2001
IC6001
MN5342VEB
R6043
R6046
R6019
R6020
R6021
R6022
C4002
D6005
P4001
P6001
J12
QR6005
R6027
R2012
TP2002
TP202
R2004
SERVO PACK
R6025
D2001
R2014
R2017
C6013
VR2001
PG SHIFT
VR2002
TR-FIX
VR2011
SLOW TRACKING FIX
R2022
R2018
Q6002
J3
TP2015

3-11. SERVO PACK CIRCUIT BOARD (VEP02225E)


P201
R231
C225
R230
R229
C226
C235
C231
C230
R224
C233
C234
C232
R232
R219
R233
D213
C221
D214
R227
Q205
R222
R217
C242
R223
C240
C241
R218
Q204
D205
IC203
AN6387
D204
C228
C229
R225
C227
R226
C238
C248
R203
C247
J1
R209
IC201
AN3795N
R202
R228
C237
CR2002
C249
C243
C250
D211
Q203
R260
D210
R261
R253
C244
R235
R234
C207
QR208
C205
C203
C202
C201
C239
R255
R256
C204
R257
R258
R259
C209
C208
IC207
MN6178VAL
TP2004
TP2003
R220
R221
R241
R265
D212
C216
IC206
AN3792
C210
C223
C211
C214
C251
C212
CR201
C213
R254
R244
V-LOOK VR
VR2003
QR202
R237
C222
R240
C220
C219
C218
C215
C217
R245
R246
R250
D209
R251
R252
R248
D208
R249
IC205
BA8420
Q201
R211
R239
R210
QR205
R264
E C B

3-12. LUMINANCE & CHROMINANCE SCHEMATIC DIAGRAM


MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
TP3002 E-E
0.5V/20μsec. div. 2.0Vp-p
TP3002 PLAY
0.5V/20μsec. div. 2.0Vp-p
TP3001 PLAY
0.1V/5msec. div. 0.3Vp-p
INPUT SELECT PACK C.B.A (VEP03387A)
IC3101
TA7347P
IC3102
M5201L
Q3101
2SB641
Q3102
2SD636
QR3101
DTC144EA
or UN1213
QR3102
DTC144EA
or UN1213
QR3103
DTC144EA
or UN1213
21 PIN JACK
P3002
P3101
P3001 (TO HEAD AMP)
(TO SERVO)
CAMERA/TUNER
ART V SYNC
PICTURE CONT
ROTARY SW
D-REC 12V
HEAD SW
EE
REG 5V
HEAD AMP SW
(TO TV DEMODULATOR)
VIDEO IN
GND
AUDIO IN
AUDIO IN
Q3001
2SB641
(BUFFER)
Q8001
2SD636
QR8001
DTC124EA or UN1212
SW3051
TEST — AUTO — COLOUR
(TO RF CONVERTER)
LUMINANCE & CHROMINANCE PACK
C.B.A VEP03316G
P302 (TO OPERATION)
P301
HQ & REC AMP PACK
P3602
Q3501
2SC2206(B,C)
Q3502
2SC2206
(B,C)
Q3503
2SB641(R,S)
Q3504
2SB641
Q3601
2SC2206
Q3602
2SB641
Q3603
2SB641
Q3604
2SD636
Q3605
2SB641
QR3601
DTC114EA
or UN1211
IC 851
BA7025
(SECAM DETECTOR)
Q851
2SC2206ABC
QR 851
DTC124EA
or UN1212
QR852
DTC124EA
or UN1212
TO Y/C PACK
SECAM PACK C.B.A. (VEP03294A)
HQ & REC AMP PACK C.B.A. (VEP03318A)
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

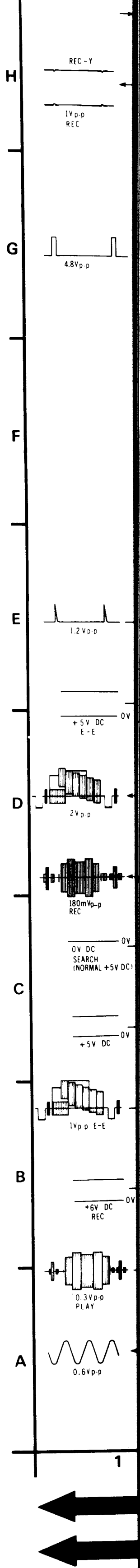
LUMINANCE & CHROMINANCE SCHEMATIC DIAGRAM	
Transistor	
Q851	A-7
Q3001	E-3
Q3101	F-9
Q3102	E-8
Q3501	D-11
Q3502	D-11
Q3503	C-11
Q3504	C-10
Q3601	B-9
Q3602	B-10
Q3603	B-10
Q3604	B-11
Q3605	B-11
Q8001	D-3
Transistor & Resistor	
QR851	A-7
QR852	A-8
QR3101	F-10
QR3102	F-11
QR3103	E-6
QR3601	A-10
QR8001	C-1
Integrated Circuit	
IC851	B-6
IC3101	F-8
IC3102	E-8
Test Point	
TP3001	D-3
TP3002	E-3
Adjustment	
T851	B-8
VR3001	D-7
VR3051	C-4
VR3601	B-10
Connector	
P301	C-6
P302	D-6
P3001	F-5
P3002	F-5
P3101	F-6
P3602	C-8

ADDRESS INFORMATION

LUMINANCE & CHROMINANCE PACK SCHEMATIC DIAGRAM	
Transistor	
Q301	H-10
Q302	D-2
Q303	F-2
Q801	C-10
Q802	B-11
Q803	B-2
Q804	E-8
Q805	E-9
Q806	G-12
Transistor & Resistor	
QR301	F-2
Integrated Circuit	
IC301	H-6
IC302	F-10
IC801	B-9
Adjustment	
VR801	G-11
Connector	
P301	F-13
P302	F-13
P801	F-13

ADDRESS INFORMATION

3-13. LU



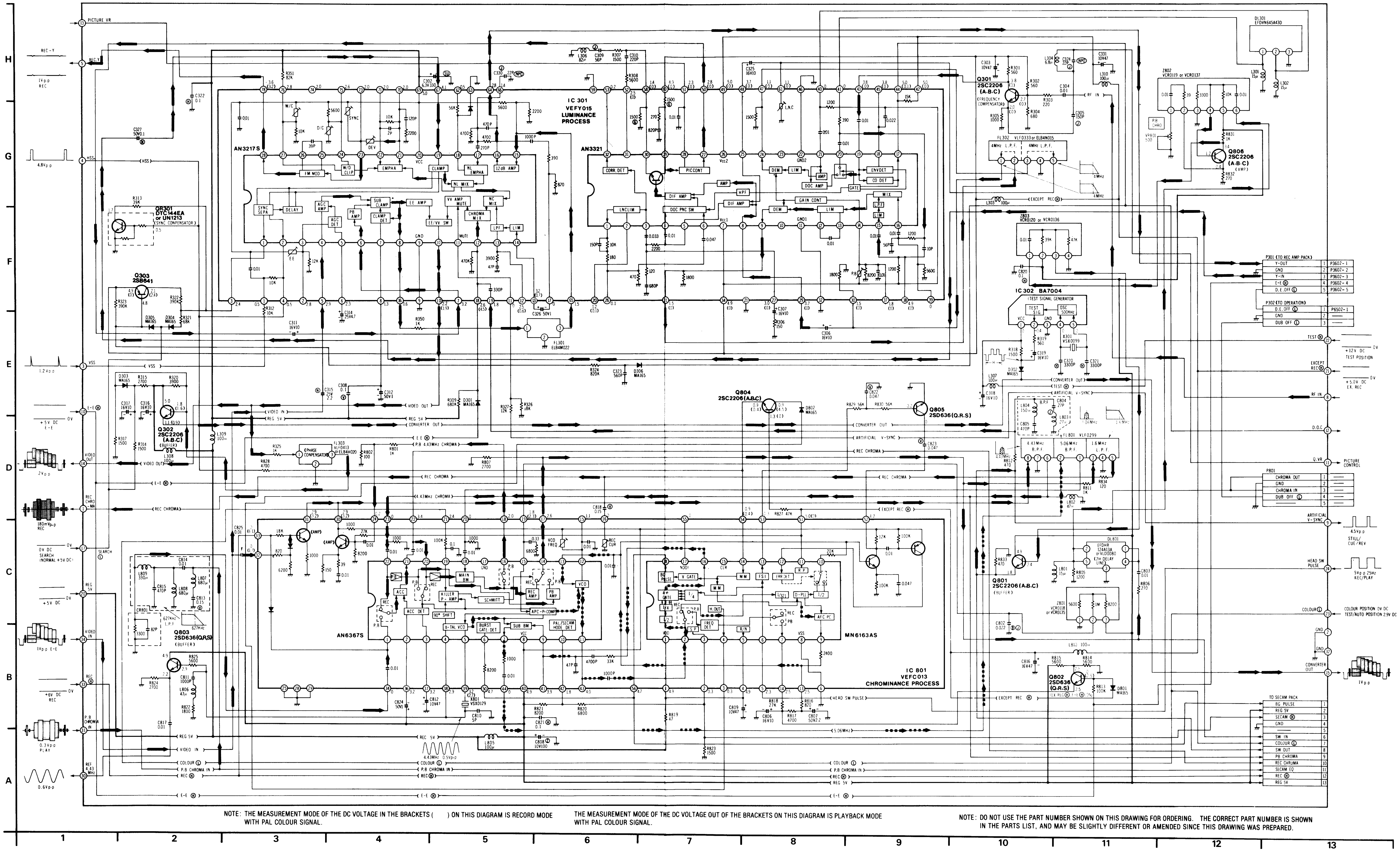
LUMINANCE & CHROMINANCE SCHEMATIC DIAGRAM	
Transistor	
Q851	A-7
Q3001	E-3
Q3101	F-9
Q3102	E-8
Q3501	D-11
Q3502	D-11
Q3503	C-11
Q3504	C-10
Q3601	B-9
Q3602	B-10
Q3603	B-10
Q3604	B-11
Q3605	B-11
Q8001	D-3
Transistor & Resistor	
QR851	A-7
QR852	A-8
QR3101	F-10
QR3102	F-11
QR3103	E-6
QR3601	A-10
QR8001	C-1
Integrated Circuit	
IC851	B-6
IC3101	F-8
IC3102	E-8
Test Point	
TP3001	D-3
TP3002	E-3
Adjustment	
T851	B-8
VR3001	D-7
VR3051	C-4
VR3601	B-10
Connector	
P301	C-6
P302	D-6
P3001	F-5
P3002	F-5
P3101	F-6
P3602	C-8

ADDRESS INFORMATION

LUMINANCE & CHROMINANCE PACK SCHEMATIC DIAGRAM	
Transistor	
Q301	H-10
Q302	D-2
Q303	F-2
Q801	C-10
Q802	B-11
Q803	B-2
Q804	E-8
Q805	E-9
Q806	G-12
Transistor & Resistor	
QR301	F-2
Integrated Circuit	
IC301	H-6
IC302	F-10
IC801	B-9
Adjustment	
VR801	G-11
Connector	
P301	F-13
P302	F-13
P801	F-13

ADDRESS INFORMATION

3-13. LUMINANCE & CHROMINANCE PACK SCHEMATIC DIAGRAM


H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13
PICTURE VR
REC-Y
HSS
VSS
E-E
VIDEO OUT
REC CHROMA
SEARCH
REG 5V
VIDEO IN
REC
P.B CHROMA IN
REF 4.43MHz
IC 301
VEFY015
LUMINANCE PROCESS
AN3217S
AN3321
QR301
DTC144EA or UN1213
(SYNC COMPENSATOR)
Q303
2SB641
Q302
2SC2206 (A.B.C)
(BUFFER)
Q301
2SC2206 (A.B.C)
(FREQUENCY COMPENSATOR)
FL302 VLF0333 or ELB4N015
Q806
2SC2206 (A.B.C)
(AMP)
DL301
EFDVN545A43D
Z802
VCR0119 or VCR0137
Z803
VCR0120 or VCR0136
IC302 BA7004
TEST SIGNAL GENERATOR
X301
VSX0099
Q804
2SC2206 (A.B.C)
Q805
2SD636 (Q.R.S)
FL801 VLF0299
4.43MHz B.P.F
5.06MHz B.P.F
1.6MHz L.P.F
FL301
ELB4M022
FL303
VLF0413 or ELB4M020
PHASE COMPENSATOR
Q803
2SD636 (Q.R.S)
(BUFFER)
AN6367S
MN6163AS
IC 801
VEFC013
CHROMINANCE PROCESS
X801
VSX0129
Q801
2SC2206 (A.B.C)
(BUFFER)
DL801
EFDHR124A13A or VLD0080
Z801
VCR0108 or VCR0135
Q802
2SD636 (Q.R.S)
P301 (TO REC AMP PACK)
Y-OUT
GND
Y-IN
E-E Ⓗ
D.E.OFF Ⓛ
P302 (TO OPERATION)
D.E.OFF Ⓛ
GND
DUB OFF Ⓛ
TEST Ⓗ
EXCEPT REC Ⓗ
RF IN
D.O.C
Q.V
PICTURE CONTROL
P801
CHROMA OUT
GND
CHROMA IN
DUB OFF Ⓛ
ARTIFICIAL V-SYNC
HEAD SW PULSE
COLOUR Ⓛ
COLOUR POSITION 0V DC
TEST/AUTO POSITION 2.9V DC
CONVERTER OUT
TO SECAM PACK
BG PULSE
REG 5V
SECAM Ⓗ
GND
SW IN
COLOUR Ⓛ
SW OUT
PB CHROMA
REC CHROMA
SECAM EQ
REC Ⓗ
REG 5V
4.43MHz 0.5Vp-p

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.

THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

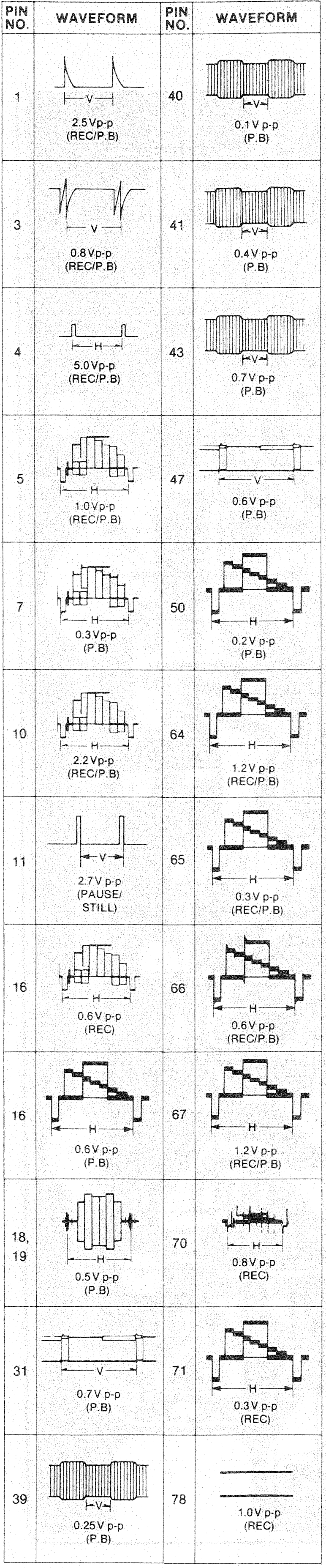
◀▬ MAIN SIGNAL PATH IN REC MODE

◀▬ MAIN SIGNAL PATH IN PLAYBACK MODE

◀■ ■ ■ 5.06MHz PHASE ROTATIONAL SIGNAL IN REC MODE

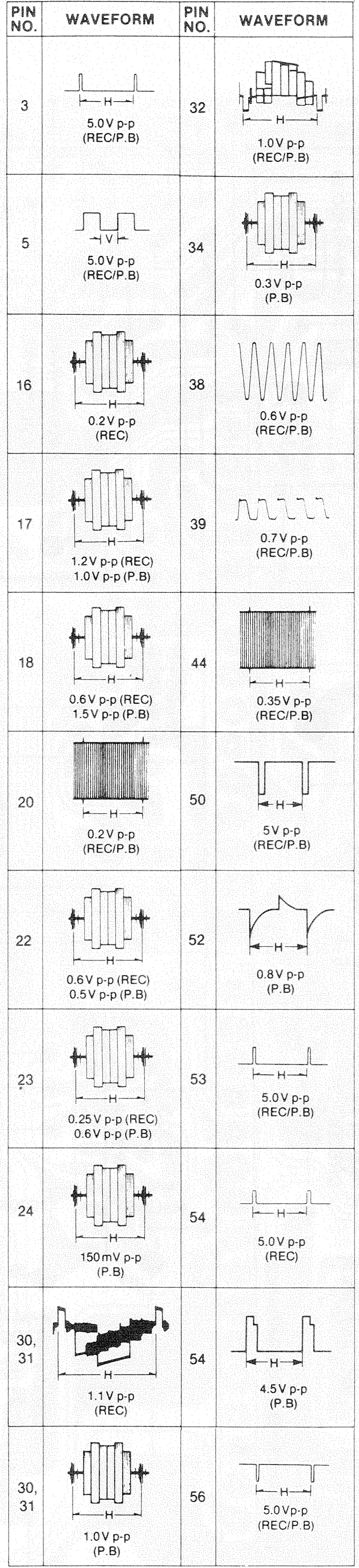
◀■ ■ ■ 5.06MHz PHASE ROTATIONAL SIGNAL IN PLAYBACK MODE

IC301 (VEFY015)



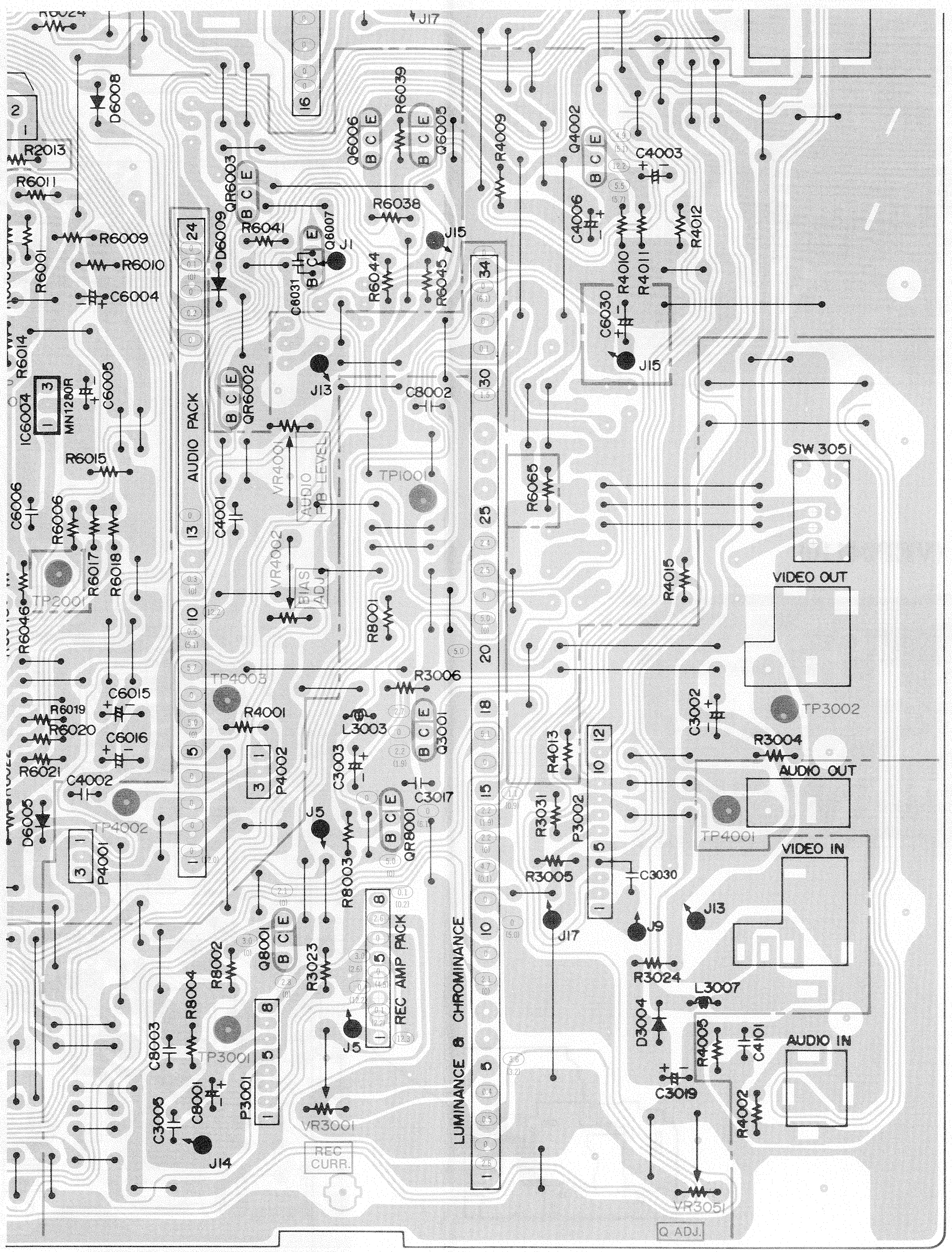
PIN NO.	WAVEFORM	PIN NO.	WAVEFORM
1	2.5Vp-p (REC/P.B)	40	0.1V p-p (P.B)
3	0.8Vp-p (REC/P.B)	41	0.4V p-p (P.B)
4	5.0Vp-p (REC/P.B)	43	0.7V p-p (P.B)
5	1.0Vp-p (REC/P.B)	47	0.6V p-p (P.B)
7	0.3Vp-p (P.B)	50	0.2V p-p (P.B)
10	2.2Vp-p (REC/P.B)	64	1.2V p-p (REC/P.B)
11	2.7V p-p (PAUSE/ STILL)	65	0.3V p-p (REC/P.B)
16	0.6V p-p (REC)	66	0.6V p-p (REC/P.B)
16	0.6V p-p (P.B)	67	1.2V p-p (REC/P.B)
18, 19	0.5V p-p (P.B)	70	0.8V p-p (REC)
31	0.7V p-p (P.B)	71	0.3V p-p (REC)
39	0.25V p-p (P.B)	78	1.0V p-p (REC)

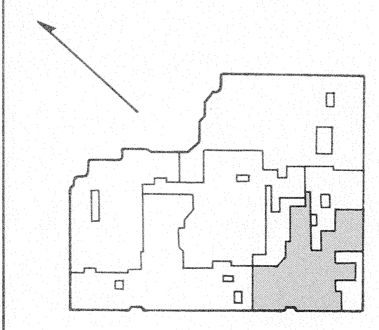
IC801 (VEFC013)



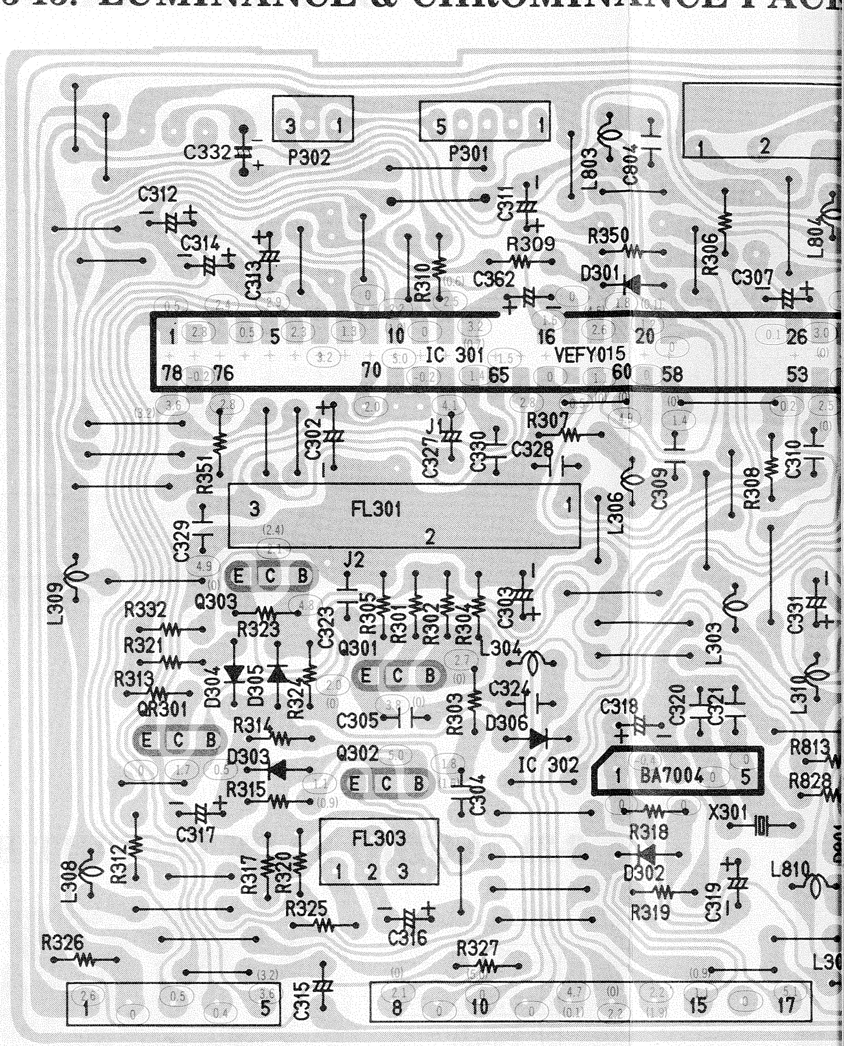
PIN NO.	WAVEFORM	PIN NO.	WAVEFORM
3	5.0V p-p (REC/P.B)	32	1.0V p-p (REC/P.B)
5	5.0V p-p (REC/P.B)	34	0.3V p-p (P.B)
16	0.2V p-p (REC)	38	0.6V p-p (REC/P.B)
17	1.2V p-p (REC) 1.0V p-p (P.B)	39	0.7V p-p (REC/P.B)
18	0.6V p-p (REC) 1.5V p-p (P.B)	44	0.35V p-p (REC/P.B)
20	0.2V p-p (REC/P.B)	50	5V p-p (REC/P.B)
22	0.6V p-p (REC) 0.5V p-p (P.B)	52	0.8V p-p (P.B)
23	0.25V p-p (REC) 0.6V p-p (P.B)	53	5.0V p-p (REC/P.B)
24	150mV p-p (P.B)	54	5.0V p-p (REC)
30, 31	1.1V p-p (REC)	54	4.5V p-p (P.B)
30, 31	1.0V p-p (P.B)	56	5.0Vp-p (REC/P.B)

3-14. LUMINANCE & CHROMINANCE Section In Main Circuit Board (VEP03336B)


AUDIO PACK
LUMINANCE & CHROMINANCE
REC AMP PACK
SW3051
VIDEO OUT
AUDIO OUT
VIDEO IN
AUDIO IN
AUDIO PB LEVEL
BIAS ADJ
REC CURR.
Q ADJ.
VR4001
VR4002
VR3001
VR3051
IC6004
MN1280R
TP1001
TP2001
TP3001
TP3002
TP4001
TP4002
TP4003
J1
J5
J9
J13
J14
J15
J17
P3001
P3002
P4001
P4002
Q3001
Q4002
Q6005
Q6006
Q8001
QR6002
QR6003
QR8001
Q6007
D3004
D6005
D6008
D6009
L3003
L3007
R2013
R3004
R3005
R3006
R3023
R3024
R3031
R4001
R4002
R4005
R4009
R4010
R4011
R4012
R4013
R4015
R6001
R6006
R6009
R6010
R6011
R6014
R6015
R6017
R6018
R6019
R6020
R6021
R6038
R6039
R6041
R6044
R6045
R6046
R6065
R8001
R8002
R8003
R8004
C3002
C3003
C3005
C3017
C3019
C3030
C4001
C4002
C4003
C4006
C4101
C6004
C6005
C6006
C6015
C6016
C6030
C6031
C8001
C8002
C8003

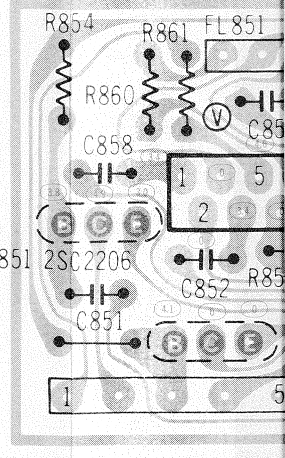


3-15. LUMINANCE & CHROMINANCE PAC

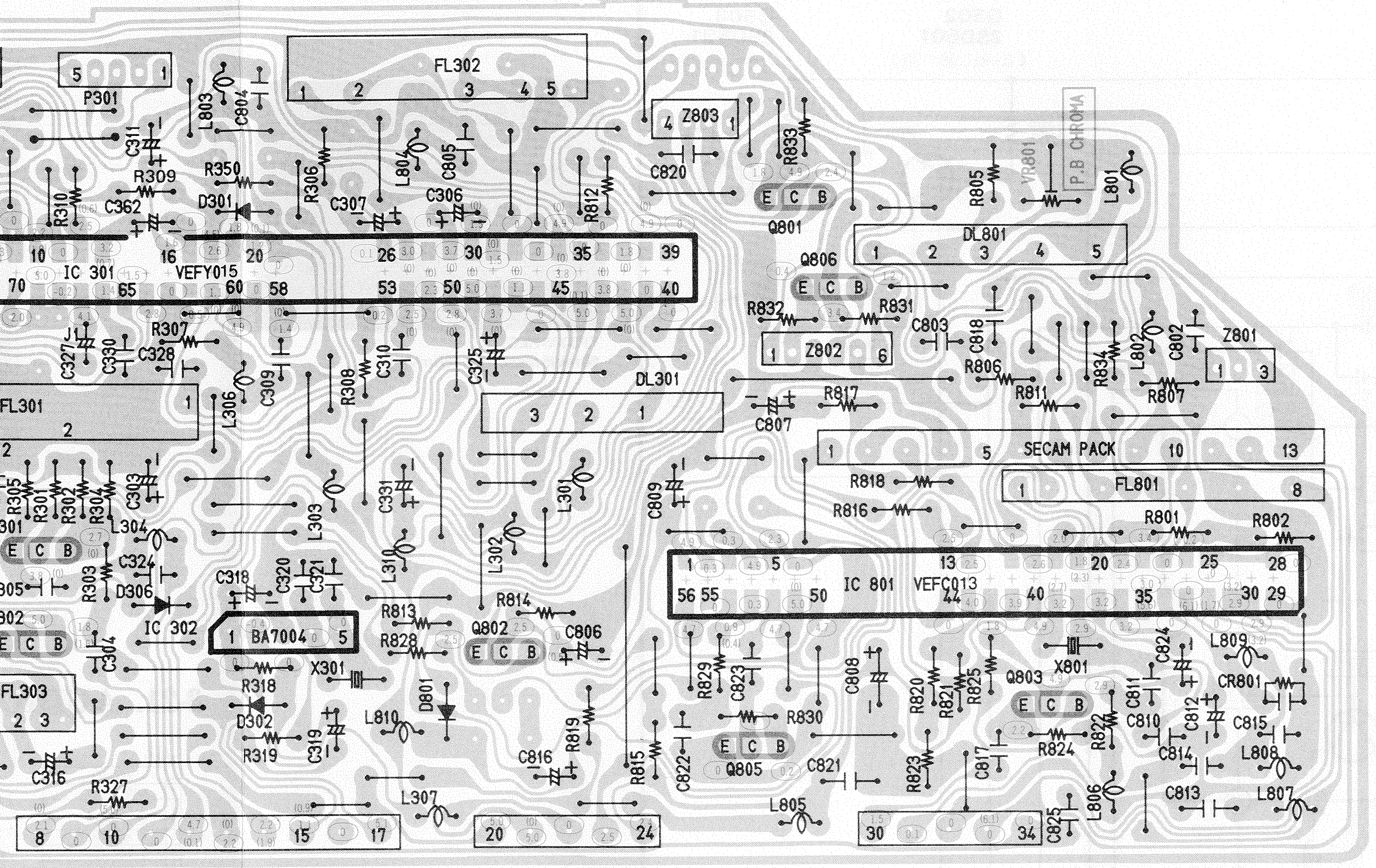

IC 301
VEFY015
IC 302
BA7004
FL301
FL303
P301
P302
X301
J1
J2
Q301
Q302
Q303
QR301
D301
D302
D303
D304
D305
D306
L303
L304
L306
L308
L309
L803
L810
R301
R302
R303
R304
R305
R306
R307
R308
R309
R310
R312
R313
R314
R315
R317
R318
R319
R320
R321
R323
R325
R326
R327
R332
R350
R351
R813
R828
C302
C303
C304
C305
C307
C309
C310
C311
C312
C313
C314
C315
C316
C317
C318
C319
C320
C321
C323
C324
C327
C328
C329
C330
C331
C332
C362
C804

3-16. SECAM PA

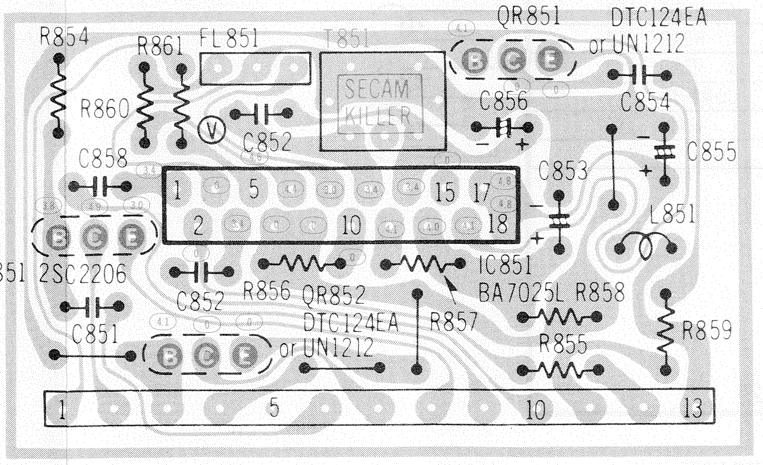
(VEP03294A


R854
R860
R861
FL851
C851
C852
C858
Q851 2SC2206

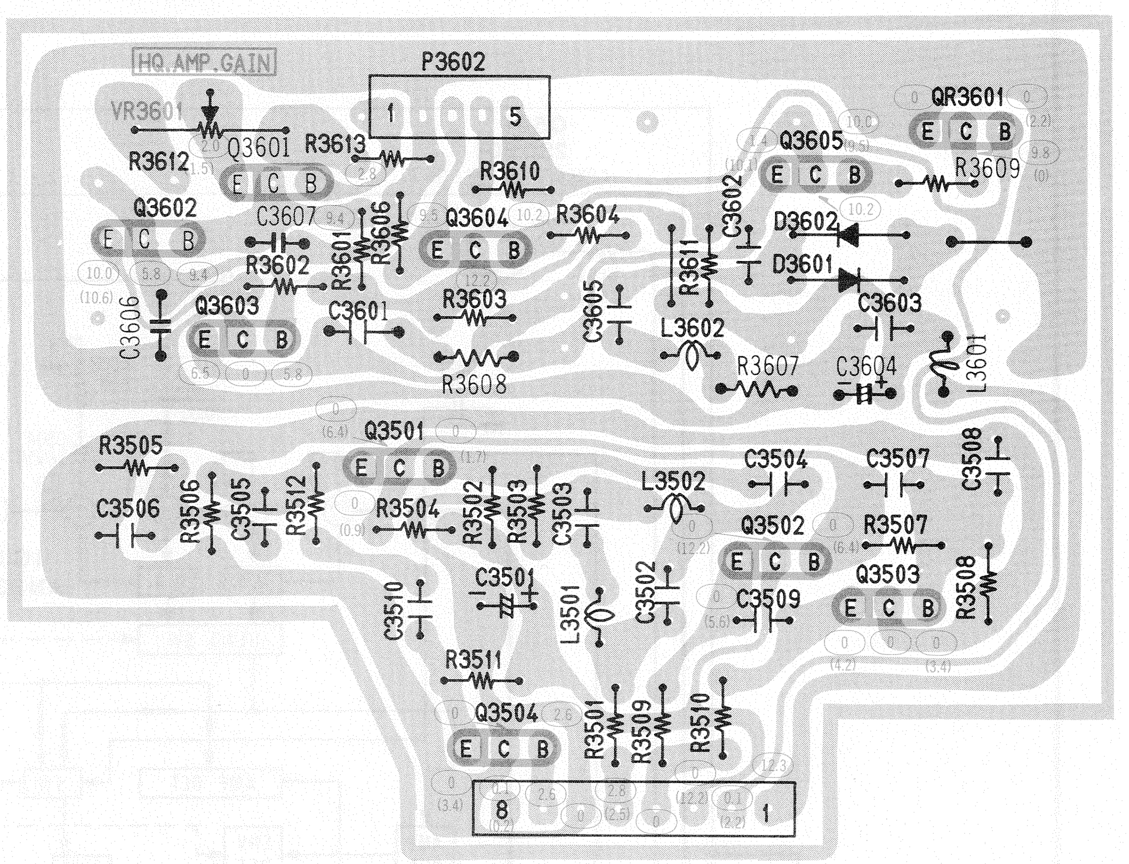
& CHROMINANCE PACK CIRCUIT BOARD (VEP03316G)


P301
FL302
Z803
IC 301
VEFY015
Q801
Q806
DL801
P.B CHROMA
VR801
Z802
Z801
DL301
FL301
SECAM PACK
FL801
IC 801
VEFC013
IC 302
BA7004
Q802
X301
X801
Q803
Q805
CR801
FL303

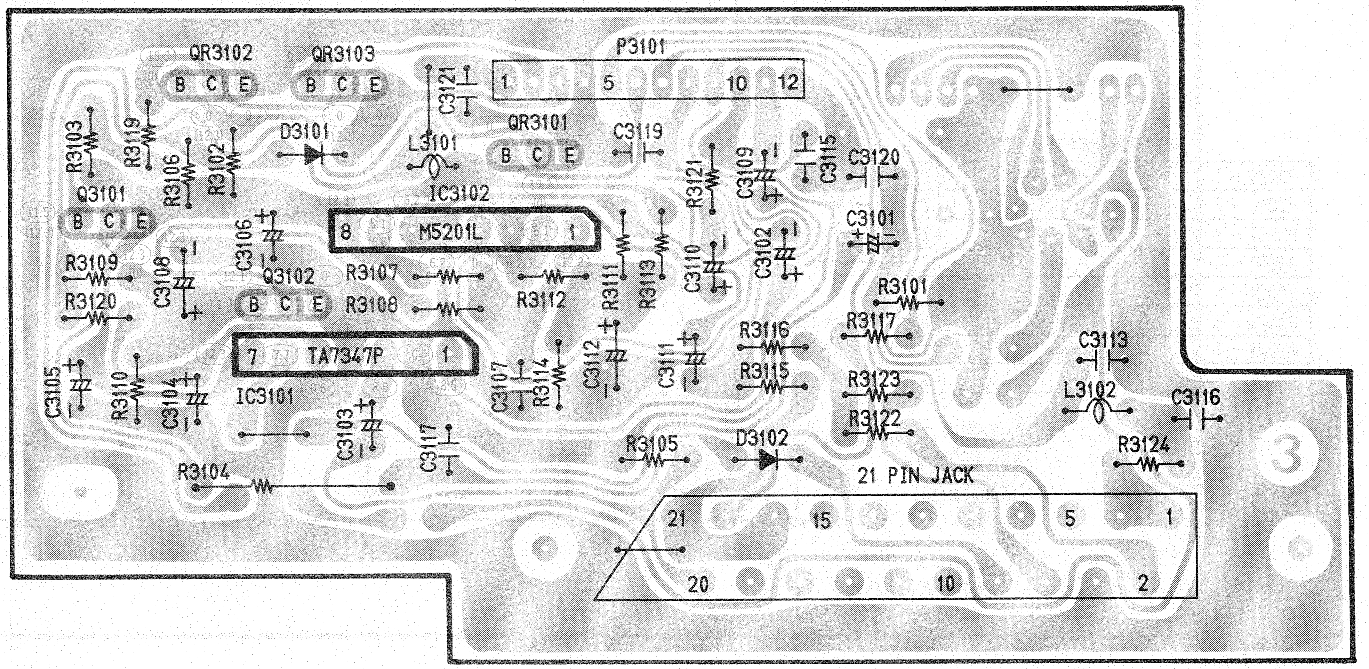
3-16. SECAM PACK CIRCUIT BOARD (VEP03294A)


QR851
DTC124EA or UN1212
FL851
T851
SECAM KILLER
IC851
BA7025L
Q851 2SC2206
QR852
DTC124EA or UN1212

3-17. HQ & REC AMP PACK CIRCUIT BOARD (VEP03318A)


HQ.AMP.GAIN
VR3601
P3602
Q3601
Q3602
Q3603
Q3604
Q3605
QR3601
D3601
D3602
L3601
L3602
Q3501
Q3502
Q3503
Q3504
L3501
L3502

3-18. INPUT SELECT PACK CIRCUIT BOARD (VEP03387A)


QR3102
QR3103
P3101
QR3101
Q3101
Q3102
D3101
D3102
L3101
L3102
IC3102
M5201L
IC3101
TA7347P
21 PIN JACK

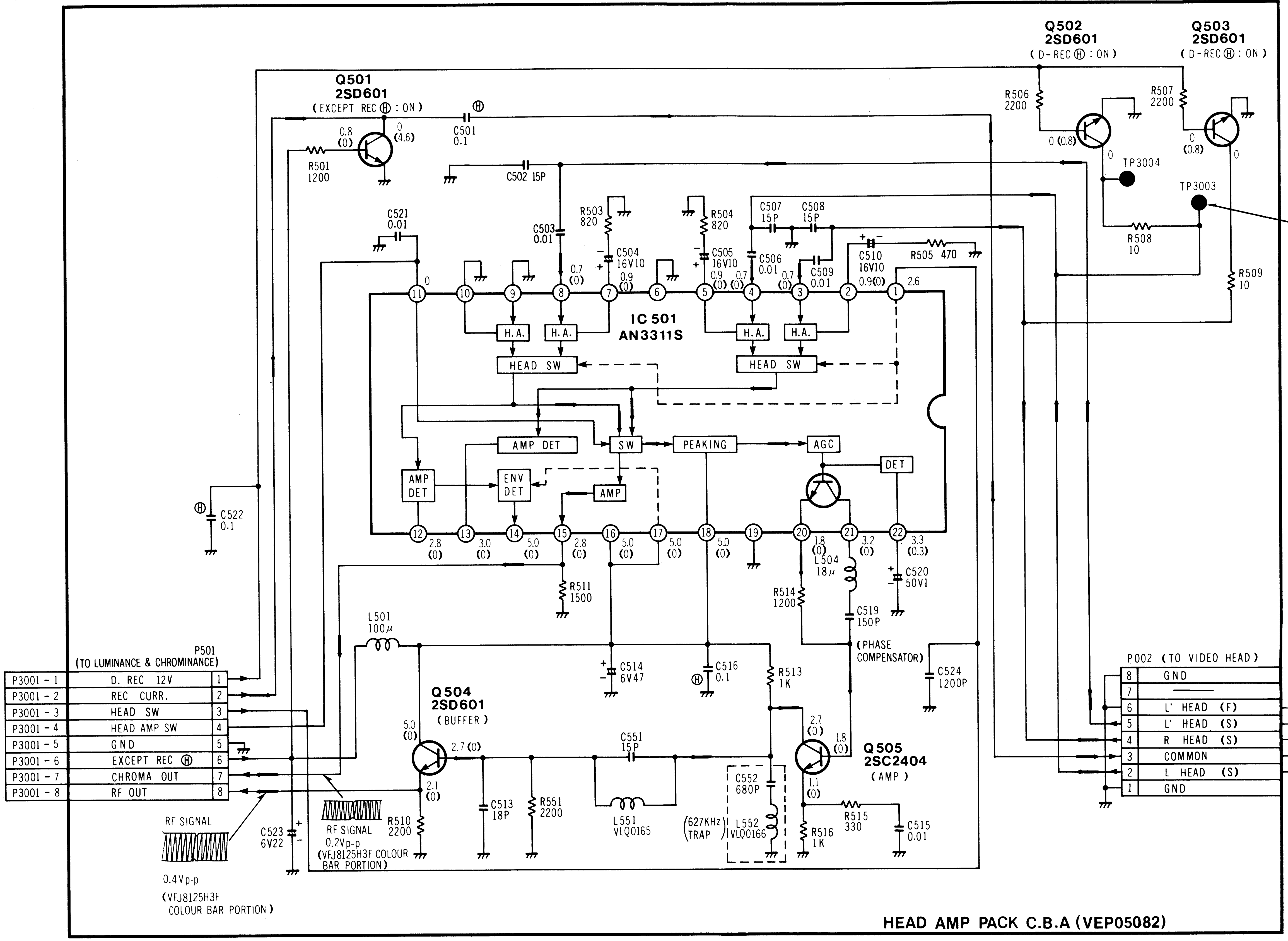
IC3

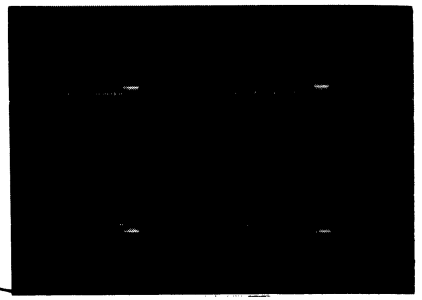
PIN NO.
1
3
4
5
7
10
11
16
16
18, 19
31
39

3-19. HEAD AMP PACK SCHEMATIC DIAGRAM

MAIN SIGNAL PATH IN REC MODE

MAIN SIGNAL PATH IN PLAYBACK MODE


Q501
2SD601
(EXCEPT REC Ⓗ : ON)
Q502
2SD601
(D-REC Ⓗ : ON)
Q503
2SD601
(D-REC Ⓗ : ON)
R501 1200
C501 0.1
C502 15P
C503 0.01
C521 0.01
R503 820
R504 820
C504 16V10
C505 16V10
C506 0.01
C507 15P
C508 15P
C509 0.01
C510 16V10
R505 470
R506 2200
R507 2200
R508 10
R509 10
TP3004
TP3003
IC 501
AN3311S
H.A.
HEAD SW
AMP DET
SW
PEAKING
AGC
DET
ENV DET
AMP
C522 0.1
R511 1500
L501 100μ
C514 6V47
C516 0.1
R513 1K
R514 1200
L504 18μ
C520 50V1
C519 150P
(PHASE COMPENSATOR)
C524 1200P
Q504
2SD601
(BUFFER)
Q505
2SC2404
(AMP)
C551 15P
C513 18P
R551 2200
L551 VLQ0165
C552 680P
L552 VLQ0166
(627KHz TRAP)
R510 2200
R515 330
R516 1K
C515 0.01
C523 6V22
P501
(TO LUMINANCE & CHROMINANCE)
P3001 - 1 | D. REC 12V | 1
P3001 - 2 | REC CURR. | 2
P3001 - 3 | HEAD SW | 3
P3001 - 4 | HEAD AMP SW | 4
P3001 - 5 | GND | 5
P3001 - 6 | EXCEPT REC Ⓗ | 6
P3001 - 7 | CHROMA OUT | 7
P3001 - 8 | RF OUT | 8
P002 (TO VIDEO HEAD)
8 GND
7
6 L' HEAD (F)
5 L' HEAD (S)
4 R HEAD (S)
3 COMMON
2 L HEAD (S)
1 GND
L'
R
L
RF SIGNAL
0.4Vp-p
(VFJ8125H3F COLOUR BAR PORTION)
RF SIGNAL
0.2Vp-p
(VFJ8125H3F COLOUR BAR PORTION)
HEAD AMP PACK C.B.A (VEP05082)



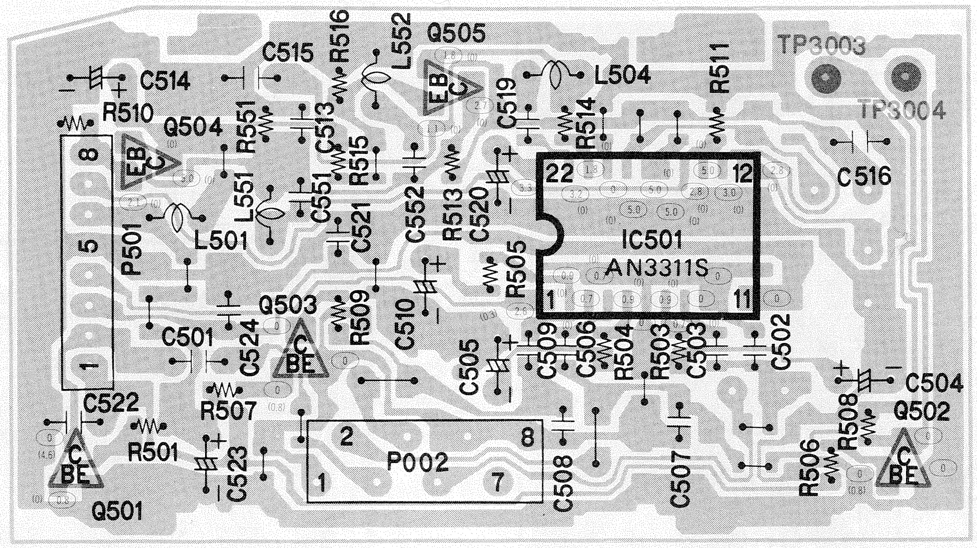
TP3003 REC
50mV/5msec. div. 180mVp-p

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

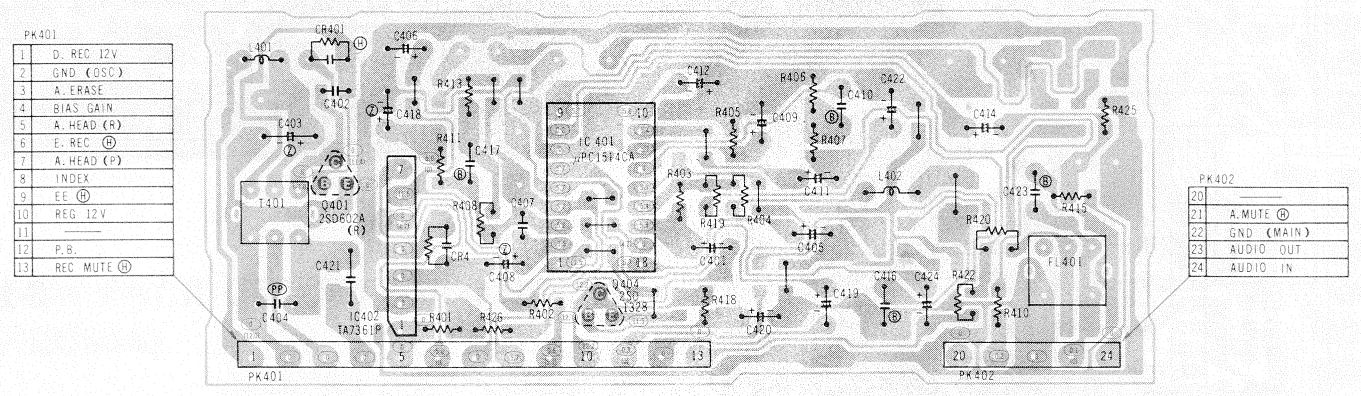
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH PAL COLOUR SIGNAL.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH PAL COLOUR SIGNAL.

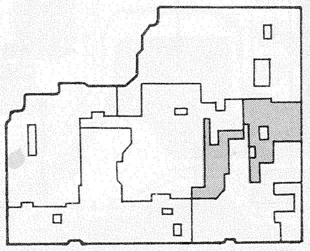
Back Page:
LUMINANCE & CHROMINANCE Section

3-20. HEAD AMP PACK CIRCUIT BOARD (VEP05082)

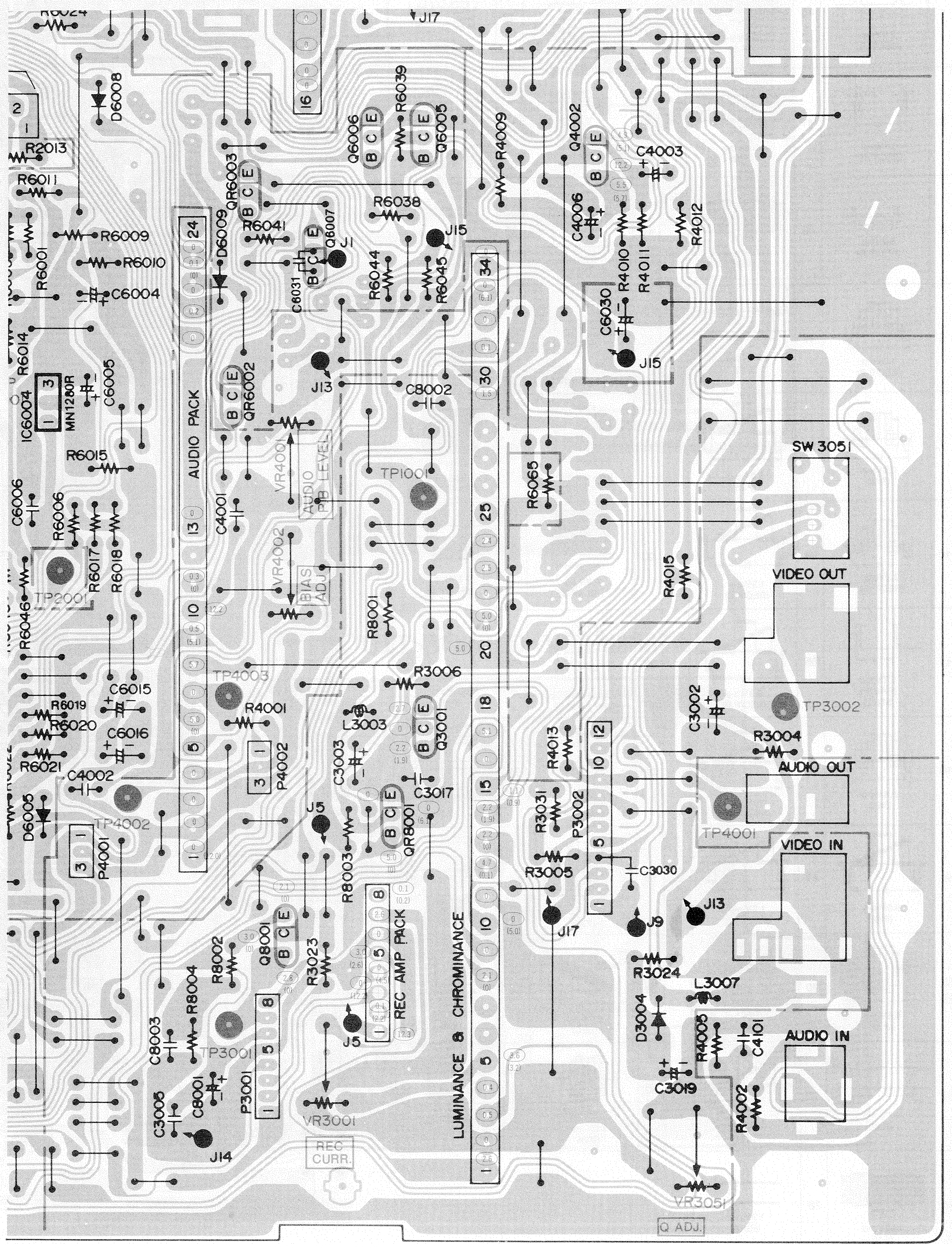

TP3003
TP3004
C514
C515
R516
L552
Q505
L504
R511
R510
Q504
R551
C513
C519
R514
C516
P501
L551
C551
R515
C552
R513
C520
IC501
AN3311S
22
12
1
11
L501
R505
Q503
R509
C510
C501
C524
C505
C509
C506
R504
R503
C503
C502
C504
C522
R507
R508
Q502
R501
C523
P002
2
8
1
7
C508
C507
R506
Q501

3-21. AUDIO PACK CIRCUIT BOARD (VEP04110)

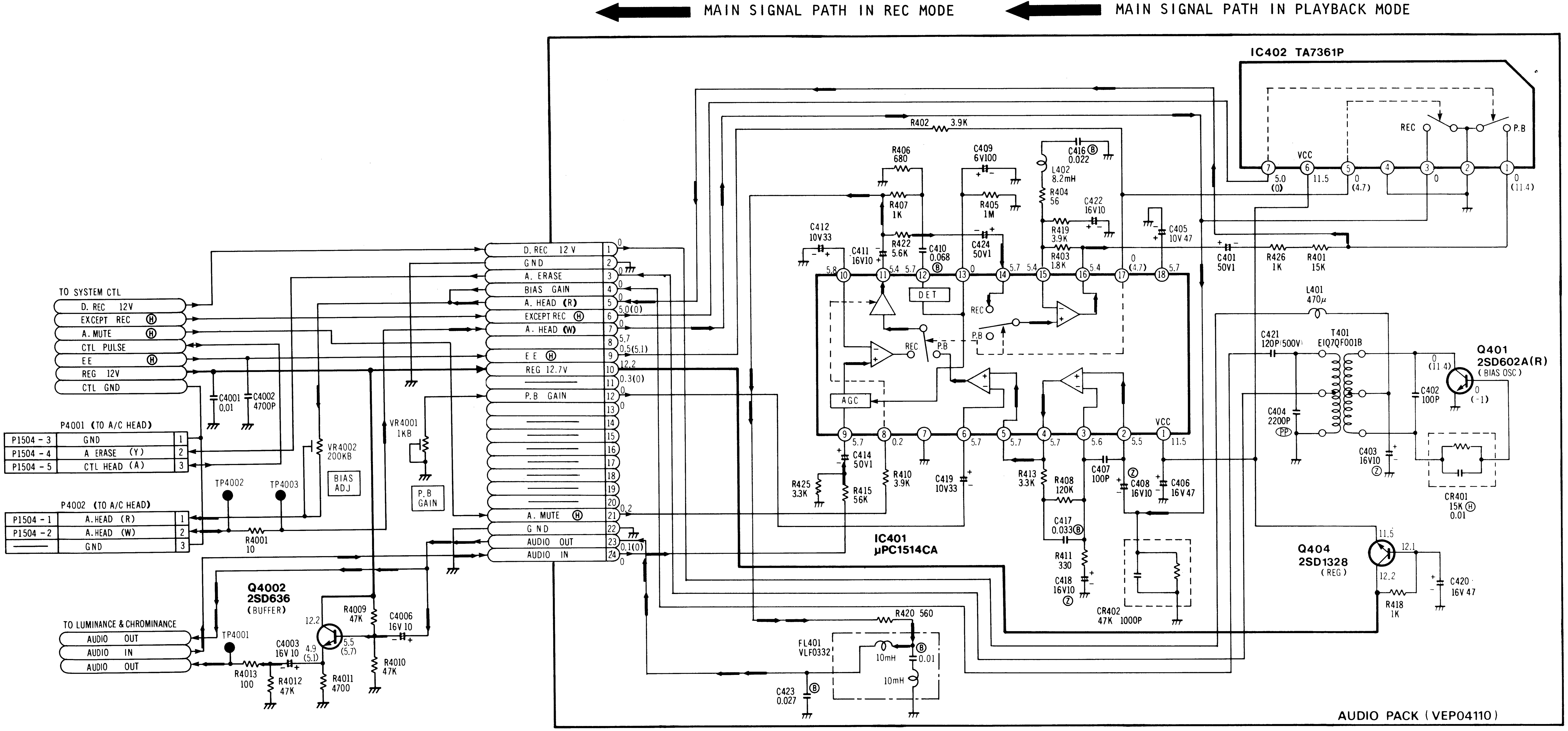

PK401
1 D. REC 12V
2 GND (OSC)
3 A. ERASE
4 BIAS GAIN
5 A. HEAD (R)
6 E. REC Ⓗ
7 A. HEAD (P)
8 INDEX
9 EE Ⓗ
10 REG 12V
11 ————
12 P.B.
13 REC MUTE Ⓗ
PK402
20 ————
21 A.MUTE Ⓗ
22 GND (MAIN)
23 AUDIO OUT
24 AUDIO IN
L401
CR401
C406
C412
R406
C422
R413
C402
C418
R405
C409
C410
C414
R425
C403
R411
C417
IC401
μPC1514CA
R407
T401
Q401
2SD602A
R403
C407
C411
L402
C423
R415
R408
R419
R404
R420
C405
C421
C401
FL401
C404
IC402
TA7361P
R401
R426
R402
Q404
R418
C419
C416
C424
R422
R410
C420
PK401
PK402



3-22. AUDIO Section In Main Circuit Board (VEP03336B)


R6024
J17
D6008
R6039
Q6006
Q6005
R4009
Q4002
C4003
R2013
R6011
QR6003
R6038
R6009
R6010
C6004
R6001
D6009
R6041
Q6007
J1
J15
R6044
R6045
C4006
R4010
R4011
R4012
C6031
C6030
J15
R6014
IC6004
MN1280R
C6005
QR6002
J13
C8002
AUDIO PACK
VR4001
AUDIO PB LEVEL
TP1001
R6065
SW3051
R6015
C6006
R6006
R6017
R6018
C4001
VR4002
BIAS ADJ
R8001
R4015
VIDEO OUT
TP2001
R6046
C6015
TP4003
R3006
R6019
R6020
R4001
L3003
Q3001
C3002
TP3002
C6016
R6021
C4002
P4002
C3003
R4013
R3004
AUDIO OUT
D6005
TP4002
J5
C3017
QR8001
R3031
P3002
TP4001
VIDEO IN
P4001
R8003
R3005
C3030
J13
J17
J9
Q8001
R8002
R8004
R3023
REC AMP PACK
LUMINANCE & CHROMINANCE
R3024
L3007
C8003
TP3001
P3001
J5
D3004
R4005
C4101
AUDIO IN
C3005
C8001
C3019
R4002
J14
VR3001
REC CURR.
VR3051
Q ADJ.

3-23. AUDIO SCHEMATIC DIAGRAM

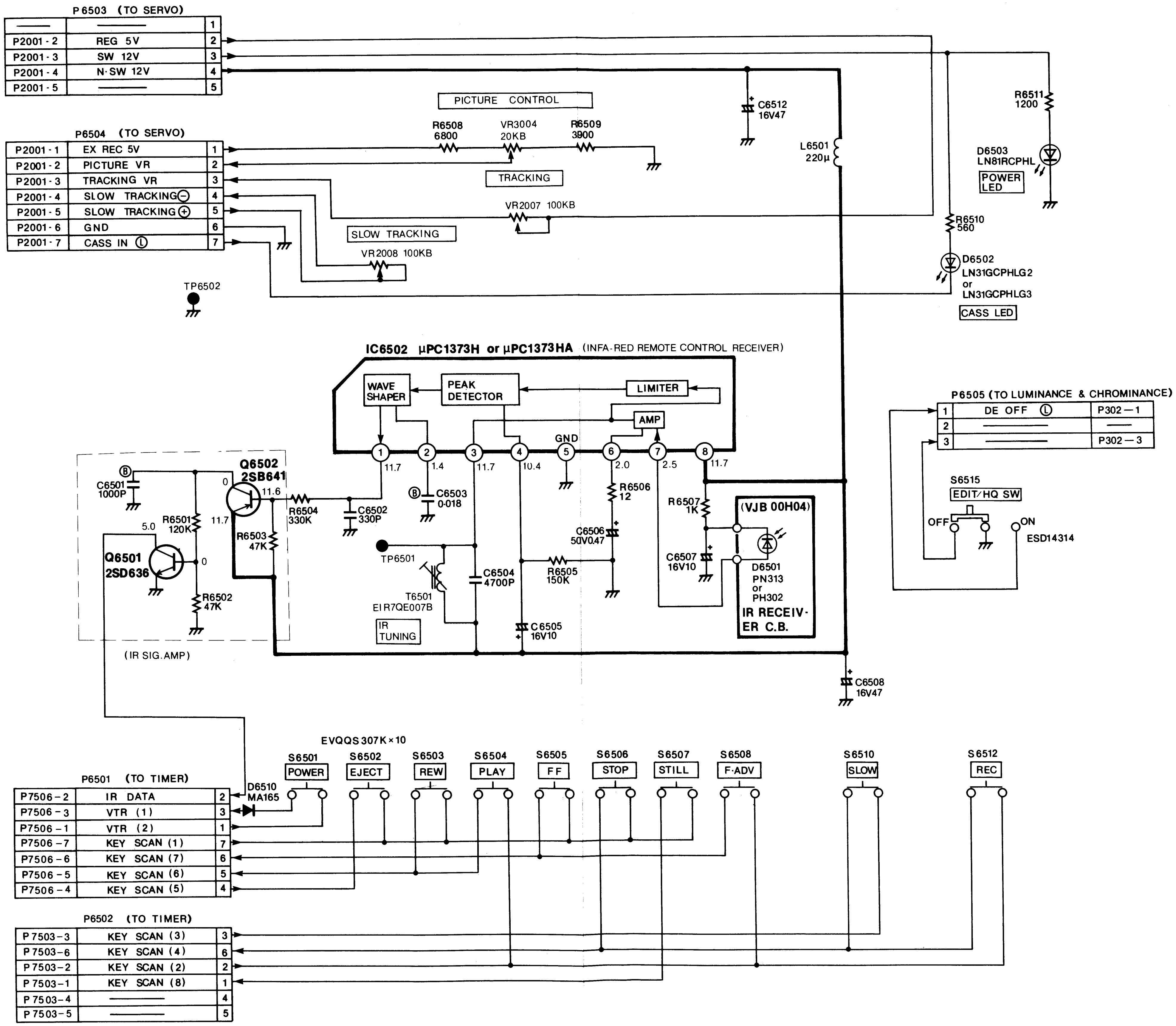


MAIN SIGNAL PATH IN REC MODE
MAIN SIGNAL PATH IN PLAYBACK MODE
IC402 TA7361P
REC
P.B
VCC
5.0 (0)
11.5
0 (4.7)
0
0 (11.4)
R402 3.9K
R406 680
C409 6V100
C416 Ⓑ 0.022
L402 8.2mH
R404 56
R407 1K
R405 1M
C422 16V10
R419 3.9K
C405 10V47
C412 10V33
C411 16V10
R422 5.6K
C410 0.068
C424 50V1
R403 1.8K
C401 50V1
R426 1K
R401 15K
DET
AGC
L401 470μ
C421 120P 500V
T401 EIQ7QF001B
Q401 2SD602A(R) (BIAS OSC)
C402 100P
C404 2200P
C403 16V10
CR401 15K Ⓗ 0.01
Q404 2SD1328 (REG)
C420 16V47
R418 1K
R425 3.3K
C414 50V1
R410 3.9K
R415 56K
C419 10V33
R413 3.3K
R408 120K
C407 100P
C408 16V10
C406 16V47
C417 0.033 Ⓑ
R411 330
C418 16V10
CR402 47K 1000P
IC401 μPC1514CA
R420 560
FL401 VLF0332
10mH
0.01
C423 0.027
AUDIO PACK (VEP04110)
TO SYSTEM CTL
D. REC 12V
EXCEPT REC Ⓗ
A. MUTE Ⓗ
CTL PULSE
EE Ⓗ
REG 12V
CTL GND
C4001 0.01
C4002 4700P
P4001 (TO A/C HEAD)
P1504 - 3 GND 1
P1504 - 4 A ERASE (Y) 2
P1504 - 5 CTL HEAD (A) 3
P4002 (TO A/C HEAD)
P1504 - 1 A.HEAD (R) 1
P1504 - 2 A.HEAD (W) 2
GND 3
TP4002
TP4003
VR4002 200KB
BIAS ADJ
VR4001 1KB
P.B GAIN
R4001 10
D. REC 12 V 1
GND 2
A. ERASE 3
BIAS GAIN 4
A. HEAD (R) 5
EXCEPT REC Ⓗ 6
A. HEAD (W) 7
8
EE Ⓗ 9
REG 12.7V 10
11
P.B GAIN 12
A. MUTE Ⓗ 21
GND 22
AUDIO OUT 23
AUDIO IN 24
5.0(0)
0.5(5.1)
12.2
0.3(0)
0.1(0)
Q4002 2SD636 (BUFFER)
R4009 47K
C4006 16V 10
C4003 16V 10
4.9 (5.1)
5.5 (5.7)
R4010 47K
R4011 4700
R4012 47K
R4013 100
TO LUMINANCE & CHROMINANCE
AUDIO OUT
AUDIO IN
AUDIO OUT
TP4001

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE IN THE BRACKETS ( ) ON THIS DIAGRAM IS RECORD MODE WITH 1kHz, 0dB SINE WAVE SIGNAL.
THE MEASUREMENT MODE OF THE DC VOLTAGE OUT OF THE BRACKETS ON THIS DIAGRAM IS PLAYBACK MODE WITH 1kHz, 0dB SINE WAVE SIGNAL.

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

3-24. OPERATION SCHEMATIC DIAGRAM

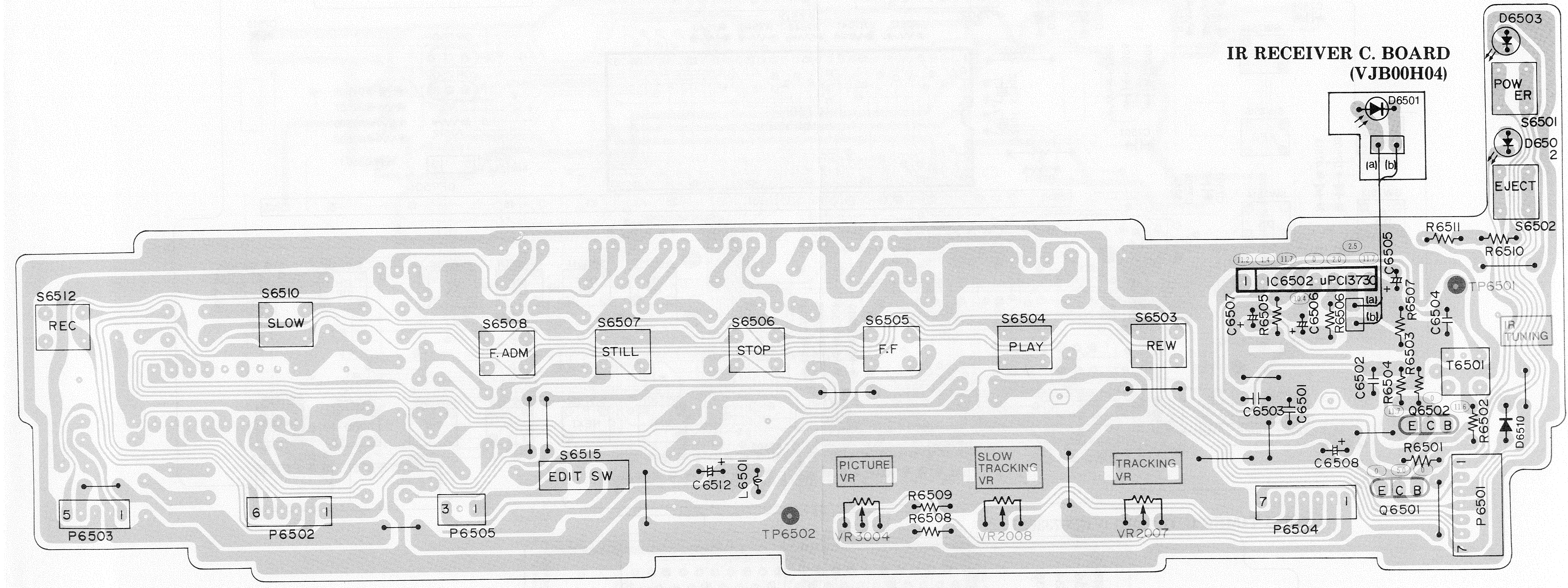

P6503 (TO SERVO)
P2001-2 REG 5V 2
P2001-3 SW 12V 3
P2001-4 N-SW 12V 4
P2001-5 5
P6504 (TO SERVO)
P2001-1 EX REC 5V 1
P2001-2 PICTURE VR 2
P2001-3 TRACKING VR 3
P2001-4 SLOW TRACKING⊖ 4
P2001-5 SLOW TRACKING⊕ 5
P2001-6 GND 6
P2001-7 CASS IN Ⓛ 7
PICTURE CONTROL
R6508 6800
VR3004 20KB
R6509 3900
TRACKING
VR2007 100KB
SLOW TRACKING
VR2008 100KB
TP6502
C6512 16V47
L6501 220µ
R6511 1200
D6503 LN81RCPHL
POWER LED
R6510 560
D6502 LN31GCPHLG2 or LN31GCPHLG3
CASS LED
IC6502 µPC1373H or µPC1373HA (INFA-RED REMOTE CONTROL RECEIVER)
WAVE SHAPER
PEAK DETECTOR
LIMITER
AMP
GND
11.7
1.4
11.7
10.4
2.0
2.5
11.7
Q6502 2SB641
C6501 1000P
R6501 120K
5.0
11.7
0
11.6
R6504 330K
C6502 330P
R6503 47K
Q6501 2SD636
R6502 47K
(IR SIG.AMP)
C6503 0.018
TP6501
T6501 EIR7QE007B
IR TUNING
C6504 4700P
C6505 16V10
R6505 150K
R6506 12
C6506 50V0.47
R6507 1K
C6507 16V10
(VJB 00H04)
D6501 PN313 or PH302
IR RECEIVER C.B.
C6508 16V47
P6505 (TO LUMINANCE & CHROMINANCE)
1 DE OFF Ⓛ P302-1
2
3 P302-3
S6515
EDIT/HQ SW
OFF
ON
ESD14314
EVQQS307K×10
S6501 POWER
S6502 EJECT
S6503 REW
S6504 PLAY
S6505 FF
S6506 STOP
S6507 STILL
S6508 F-ADV
S6510 SLOW
S6512 REC
D6510 MA165
P6501 (TO TIMER)
P7506-2 IR DATA 2
P7506-3 VTR (1) 3
P7506-1 VTR (2) 1
P7506-7 KEY SCAN (1) 7
P7506-6 KEY SCAN (7) 6
P7506-5 KEY SCAN (6) 5
P7506-4 KEY SCAN (5) 4
P6502 (TO TIMER)
P7503-3 KEY SCAN (3) 3
P7503-6 KEY SCAN (4) 6
P7503-2 KEY SCAN (2) 2
P7503-1 KEY SCAN (8) 1
P7503-4 4
P7503-5 5

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

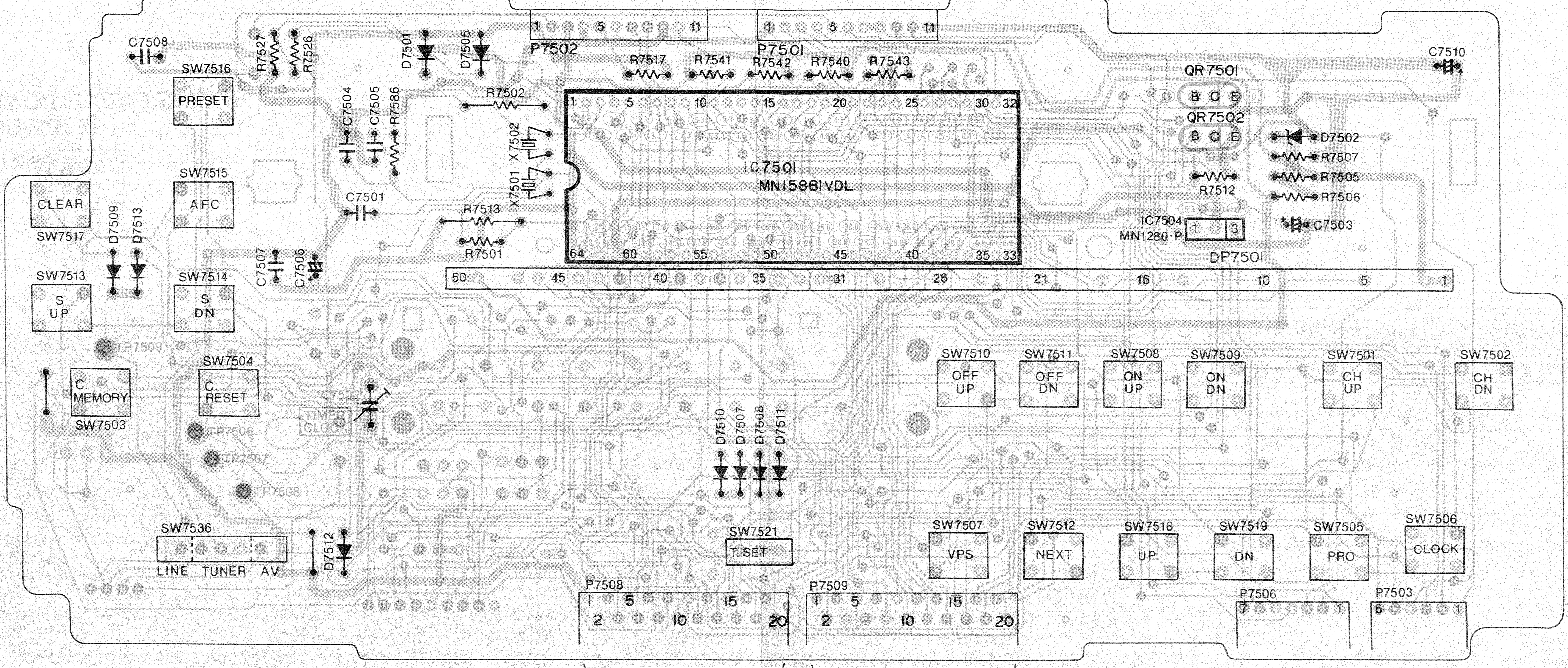
Back Page:
AUDIO Section

3-25. OPERATION CIRCUIT BOARD (VEP06364B)

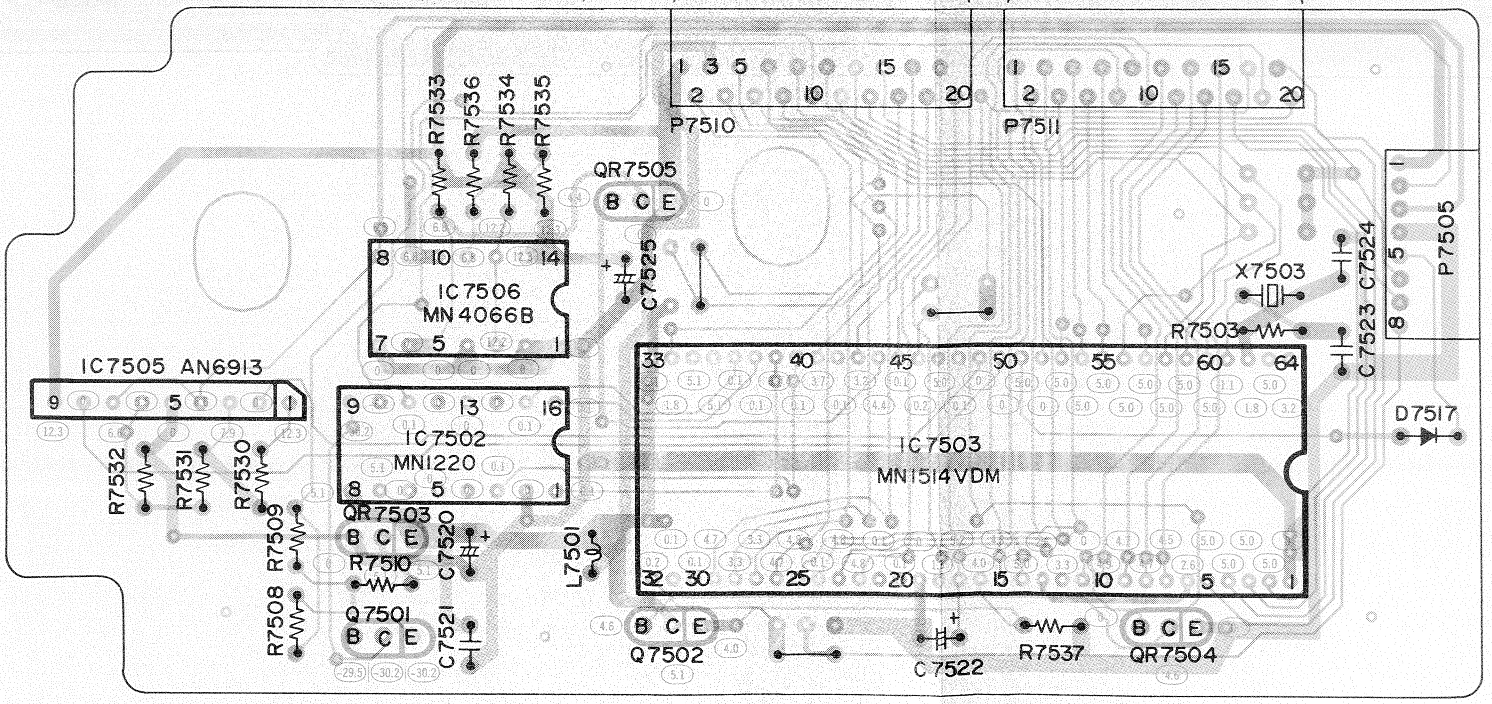

IR RECEIVER C. BOARD
(VJB00H04)
D6501
(a) (b)
D6503
POWER
S6501
D6502
EJECT
S6502
R6511
R6510
TP6501
IR TUNING
IC6502 uPC1373C
C6505
C6507
R6505
C6506
R6506
R6507
C6504
C6502
R6504
R6503
T6501
C6503
C6501
Q6502
E C B
R6502
D6510
R6501
C6508
Q6501
P6501
P6504
S6512
REC
S6510
SLOW
S6508
F. ADM
S6507
STILL
S6506
STOP
S6505
F.F
S6504
PLAY
S6503
REW
S6515
EDIT SW
C6512
L6501
PICTURE VR
SLOW TRACKING VR
TRACKING VR
R6509
R6508
VR3004
VR2008
VR2007
TP6502
P6503
P6502
P6505

3-26. TIMER CIRCUIT BOARD (VEP07337A) & SUB TIMER CIRCUIT BOARD (VEP07336C)

TIMER C. BOARD (VEP07337A)

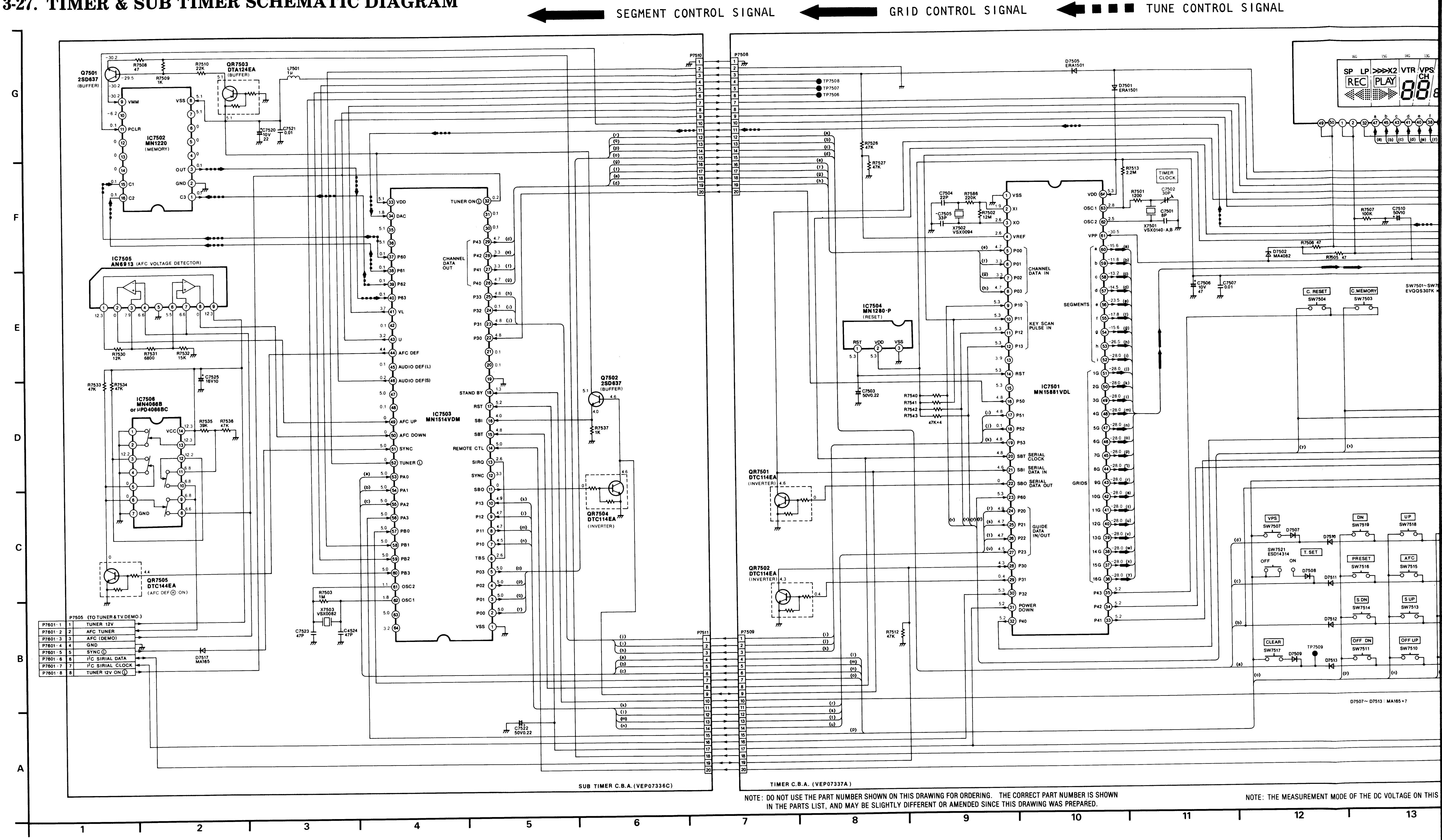

P7502
P7501
C7508
SW7516
PRESET
R7527
R7526
D7501
D7505
R7517
R7541
R7542
R7540
R7543
C7510
QR7501
QR7502
B C E
D7502
R7507
R7505
R7506
C7503
R7512
IC7504
MN1280-P
DP7501
C7504
C7505
R7586
R7502
X7502
X7501
R7513
R7501
C7501
IC7501
MN15881VDL
CLEAR
SW7517
SW7515
AFC
D7509
D7513
SW7513
S UP
SW7514
S DN
C7507
C7506
TP7509
SW7504
C. RESET
C. MEMORY
SW7503
C7502
TIMER CLOCK
TP7506
TP7507
TP7508
D7510
D7507
D7508
D7511
SW7510
OFF UP
SW7511
OFF DN
SW7508
ON UP
SW7509
ON DN
SW7501
CH UP
SW7502
CH DN
SW7536
LINE—TUNER—AV
D7512
SW7521
T. SET
SW7507
VPS
SW7512
NEXT
SW7518
UP
SW7519
DN
SW7505
PRO
SW7506
CLOCK
P7508
P7509
P7506
P7503

SUB TIMER C. BOARD (VEP07336C)


P7510
P7511
R7533
R7536
R7534
R7535
QR7505
B C E
IC7506
MN4066B
C7525
X7503
C7524
C7523
P7505
R7503
IC7505 AN6913
IC7502
MN1220
IC7503
MN1514VDM
D7517
R7532
R7531
R7530
R7509
QR7503
R7510
C7520
R7508
Q7501
C7521
L7501
Q7502
C7522
R7537
QR7504

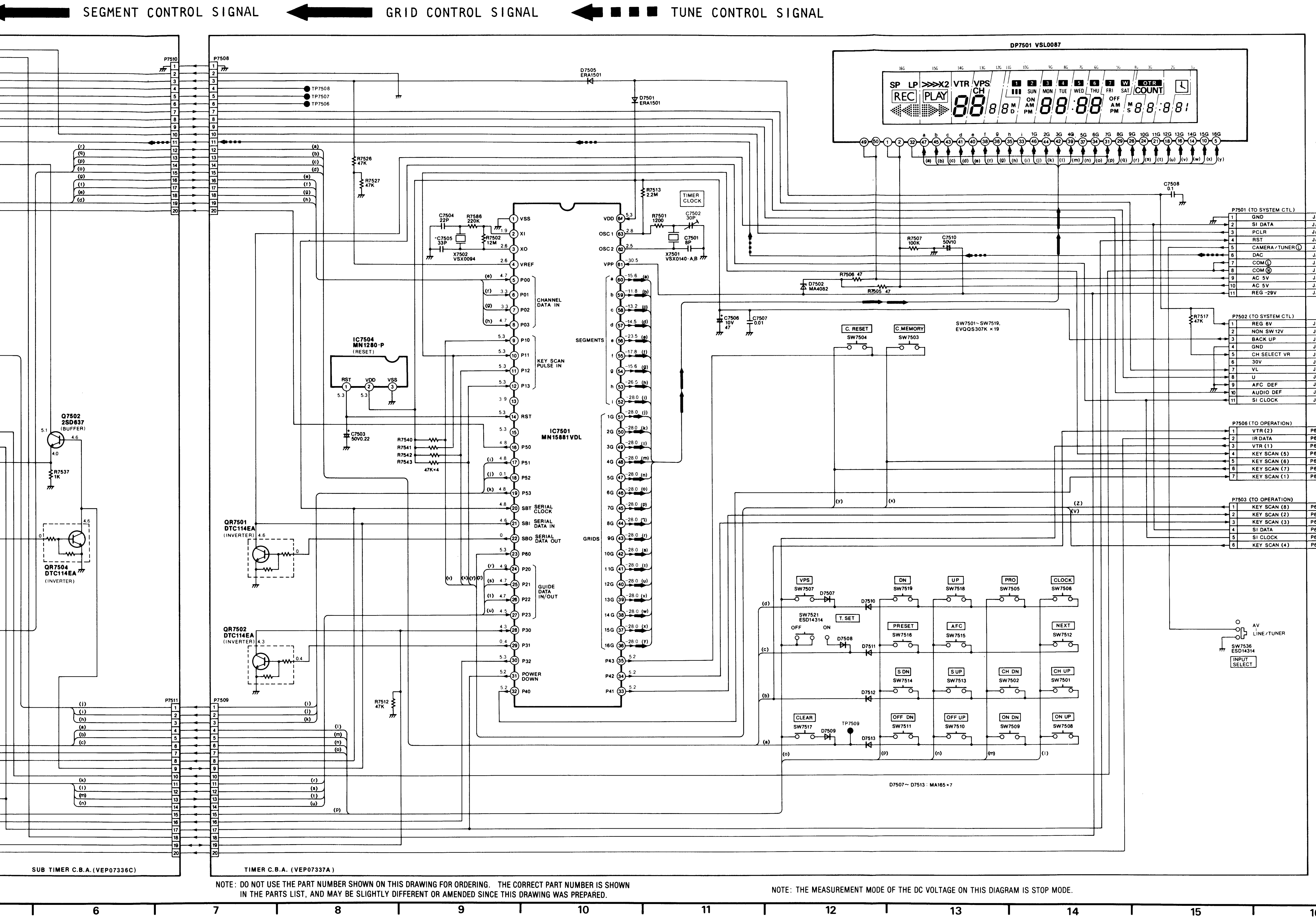
Back Page:
OPERATION Section

3-27. TIMER & SUB TIMER SCHEMATIC DIAGRAM


SEGMENT CONTROL SIGNAL
GRID CONTROL SIGNAL
TUNE CONTROL SIGNAL
Q7501 2SD637 (BUFFER)
QR7503 DTA124EA (BUFFER)
IC7502 MN1220 (MEMORY)
IC7505 AN6913 (AFC VOLTAGE DETECTOR)
IC7506 MN4066B or μPD4066BC
QR7505 DTC144EA (AFC DEF Ⓗ ON)
IC7503 MN1514VDM
CHANNEL DATA OUT
Q7502 2SD637 (BUFFER)
QR7504 DTC114EA (INVERTER)
X7503 VSX0082
P7505 (TO TUNER & TV DEMO.)
P7601·1 | 1 | TUNER 12V
P7601·2 | 2 | AFC TUNER
P7601·3 | 3 | AFC (DEMO)
P7601·4 | 4 | GND
P7601·5 | 5 | SYNC Ⓗ
P7601·6 | 6 | I²C SIRIAL DATA
P7601·7 | 7 | I²C SIRIAL CLOCK
P7601·8 | 8 | TUNER 12V ON Ⓛ
D7517 MA165
P7510
P7511
SUB TIMER C.B.A. (VEP07336C)
P7508
P7509
TP7508
TP7507
TP7506
IC7504 MN1280-P (RESET)
QR7501 DTC114EA (INVERTER)
QR7502 DTC114EA (INVERTER)
IC7501 MN15881VDL
CHANNEL DATA IN
KEY SCAN PULSE IN
SERIAL CLOCK
SERIAL DATA IN
SERIAL DATA OUT
GUIDE DATA IN/OUT
POWER DOWN
SEGMENTS
GRIDS
TIMER CLOCK
X7501 VSX0140-A,B
X7502 VSX0094
D7505 ERA1501
D7501 ERA1501
D7502 MA4082
SP LP >>>X2 VTR VPS CH
REC PLAY
C. RESET SW7504
C.MEMORY SW7503
SW7501~SW7... EVQQS307K ×...
VPS SW7507
DN SW7519
UP SW7518
SW7521 ESD14314
OFF ON
T. SET
PRESET SW7516
AFC SW7515
S DN SW7514
S UP SW7513
CLEAR SW7517
TP7509
OFF DN SW7511
OFF UP SW7510
D7507~D7513 : MA165×7
TIMER C.B.A. (VEP07337A)
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10
11
12
13

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS


SEGMENT CONTROL SIGNAL
GRID CONTROL SIGNAL
TUNE CONTROL SIGNAL
DP7501 VSL0087
IC7501
MN15881VDL
IC7504
MN1280-P
(RESET)
Q7502
2SD637
(BUFFER)
QR7501
DTC114EA
(INVERTER)
QR7502
DTC114EA
(INVERTER)
QR7504
DTC114EA
(INVERTER)
TIMER CLOCK
CHANNEL DATA IN
KEY SCAN PULSE IN
SERIAL CLOCK
SERIAL DATA IN
SERIAL DATA OUT
GUIDE DATA IN/OUT
POWER DOWN
SEGMENTS
GRIDS
P7501 (TO SYSTEM CTL)
GND
SI DATA
PCLR
RST
CAMERA/TUNER
DAC
COM
AC 5V
REG -29V
P7502 (TO SYSTEM CTL)
REG 6V
NON SW 12V
BACK UP
CH SELECT VR
30V
VL
U
AFC DEF
AUDIO DEF
SI CLOCK
P7506 (TO OPERATION)
VTR (2)
IR DATA
VTR (1)
KEY SCAN (5)
KEY SCAN (6)
KEY SCAN (7)
KEY SCAN (1)
P7503 (TO OPERATION)
KEY SCAN (8)
KEY SCAN (2)
KEY SCAN (3)
SI DATA
SI CLOCK
KEY SCAN (4)
C. RESET
C.MEMORY
SW7501~SW7519,
EVQQS307K ×19
VPS
DN
UP
PRO
CLOCK
T. SET
PRESET
AFC
NEXT
S DN
S UP
CH DN
CH UP
CLEAR
OFF DN
OFF UP
ON DN
ON UP
AV
LINE/TUNER
SW7536
ESD14314
INPUT SELECT
D7507~D7513 : MA165×7
SUB TIMER C.B.A. (VEP07336C)
TIMER C.B.A. (VEP07337A)
6
7
8
9
10
11
12
13
14
15
16

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

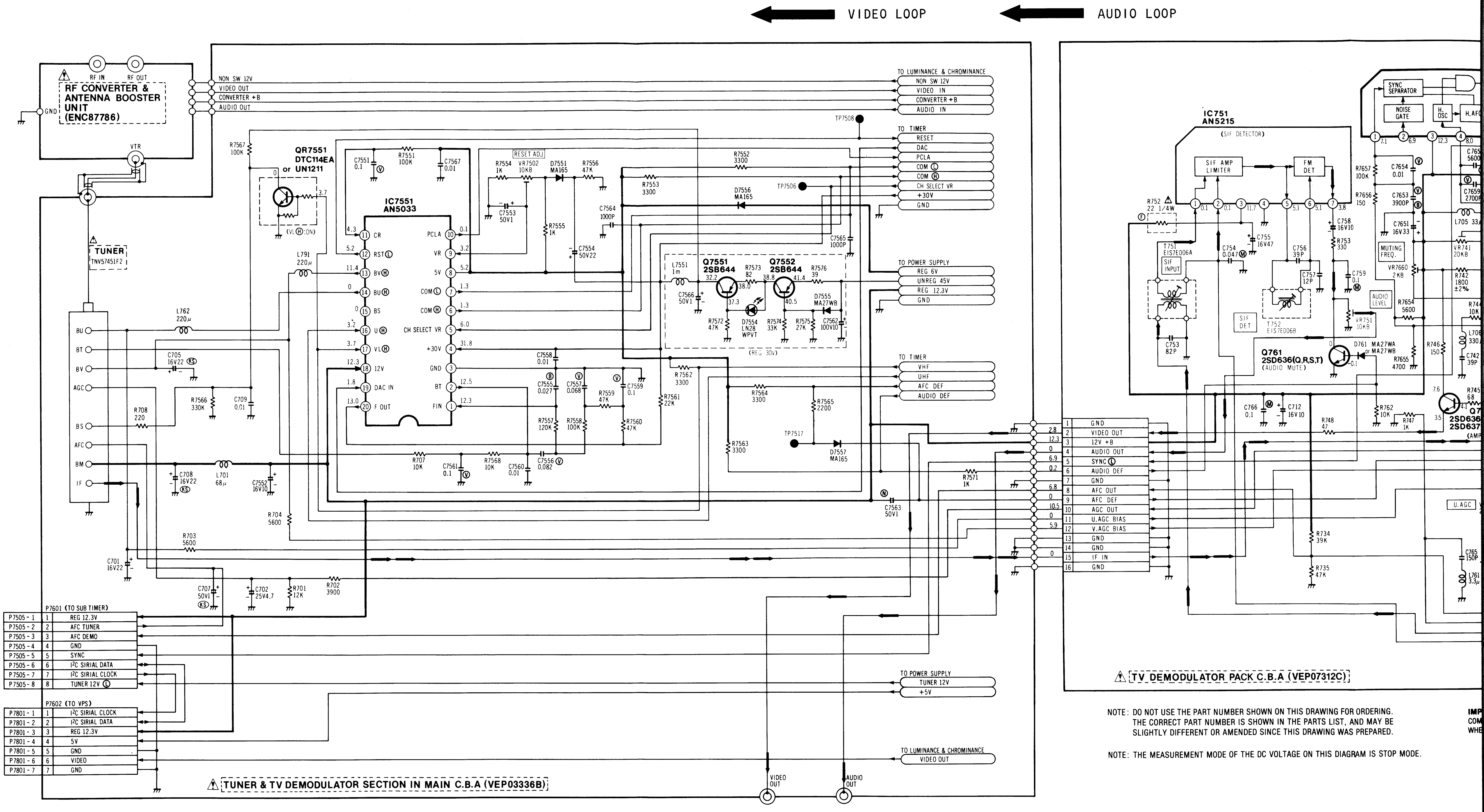
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

TIMER & SUB TIMER SCHEMATIC	
Transistor	
Q7501	G-1
Q7502	D-6
Transistor & Resistor	
QR7501	D-7
QR7502	C-7
QR7503	G-2
QR7504	C-6
QR7505	C-2
Integrated Circuit	
IC7501	D-10
IC7502	G-2
IC7503	D-4
IC7504	E-8
IC7505	F-1
IC7506	D-2
Test Point	
TP7506	G-8
TP7507	G-8
TP7508	G-8
TP7509	B-12
Adjustment	
C7502	F-11
Connector	
P7501	F-15
P7502	E-15
P7503	D-15
P7505	B-1
P7506	D-15
P7508	G-7
P7509	B-7
P7510	G-7
P7511	B-7

ADDRESS INFORMATION

Next Page:
TV DEMODULATOR Section

3-28. TUNER & TV DEMODULATOR SCHEMATIC DIAGRAM

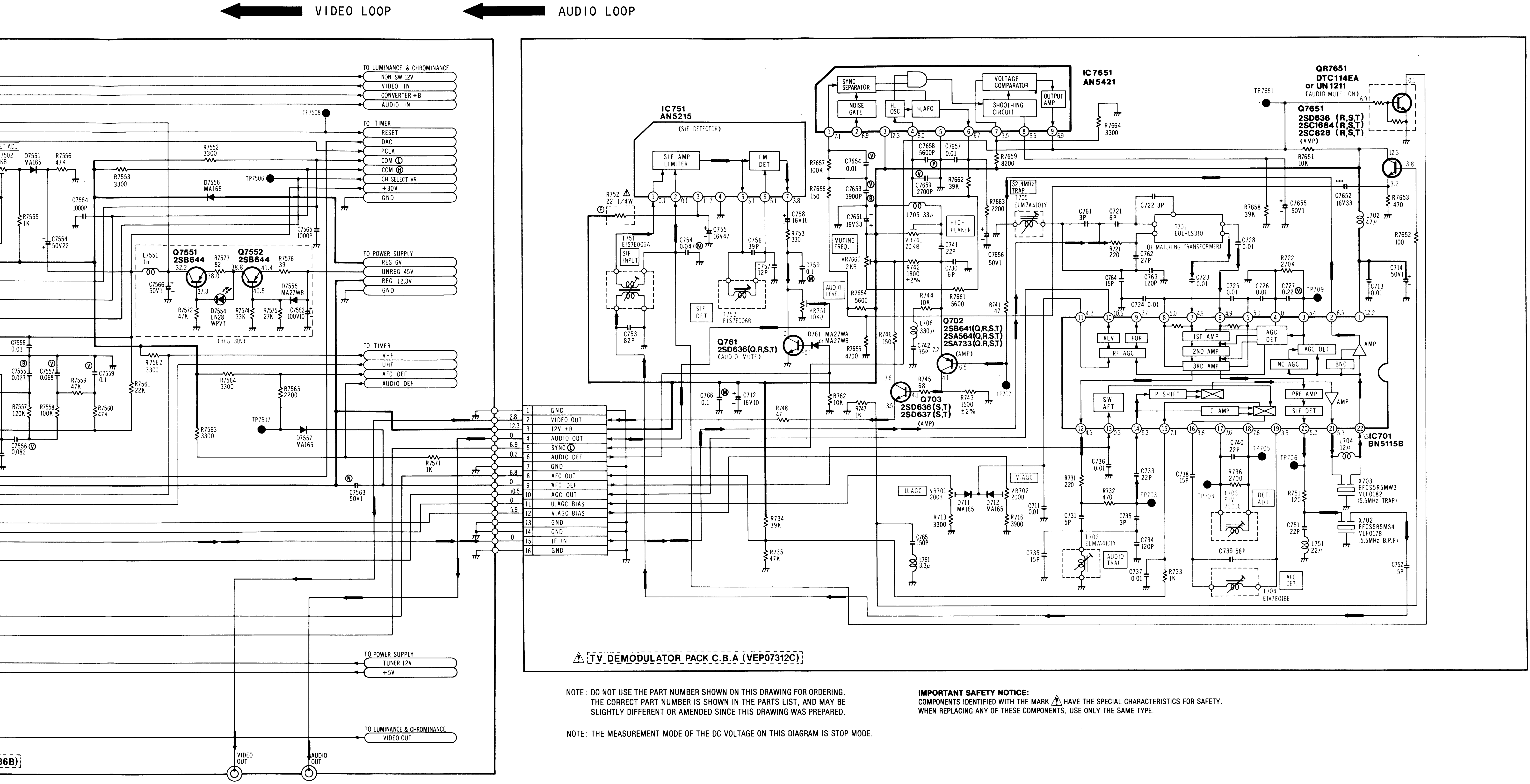

VIDEO LOOP
AUDIO LOOP
RF IN
RF OUT
RF CONVERTER & ANTENNA BOOSTER UNIT (ENC87786)
GND
NON SW 12V
VIDEO OUT
CONVERTER +B
AUDIO OUT
VTR
TUNER
TNV5745IF2
BU
BT
BV
AGC
BS
AFC
BM
IF
QR7551 DTC114EA or UN1211
(VL Ⓗ:ON)
IC7551 AN5033
CR
RST Ⓛ
BV Ⓗ
BU Ⓗ
BS
U Ⓗ
VL Ⓗ
12V
DAC IN
F OUT
PCLA
VR
5V
COM Ⓛ
COM Ⓗ
CH SELECT VR
+30V
GND
BT
FIN
RESET ADJ
R7554 1K
VR7502 10KB
D7551 MA165
R7556 47K
R7552 3300
R7553 3300
D7556 MA165
TP7506
TP7508
C7553 50V1
R7555 1K
C7554 50V22
C7564 1000P
C7565 1000P
L7551 1m
Q7551 2SB644
Q7552 2SB644
R7573 82
R7576 39
C7566 50V1
D7555 MA27WB
R7572 47K
D7554 LN28 WPVT
R7574 33K
R7575 27K
C7562 100V10
(REG 30V)
C7558 0.01
C7555 0.027
C7557 0.068
R7559 47K
C7559 0.1
R7562 3300
R7561 22K
R7557 120K
R7558 100K
R7560 47K
R7564 3300
R7565 2200
R7563 3300
TP7517
D7557 MA165
R707 10K
C7561 0.1
R7568 10K
C7560 0.01
C7556 0.082
R7571 1K
C7563 50V1
L791 220μ
L762 220μ
C705 16V22
R7566 330K
C709 0.01
R708 220
C708 16V22
L701 68μ
C7552 16V10
R704 5600
R703 5600
C701 16V22
C707 50V1
C702 25V4.7
R701 12K
R702 3900
R7567 100K
C7551 0.1
R7551 100K
C7567 0.01
TO LUMINANCE & CHROMINANCE
NON SW 12V
VIDEO IN
CONVERTER +B
AUDIO IN
TO TIMER
RESET
DAC
PCLA
COM Ⓛ
COM Ⓗ
CH SELECT VR
+30V
GND
TO POWER SUPPLY
REG 6V
UNREG 45V
REG 12.3V
GND
TO TIMER
VHF
UHF
AFC DEF
AUDIO DEF
P7601 (TO SUB TIMER)
P7505-1 1 REG 12.3V
P7505-2 2 AFC TUNER
P7505-3 3 AFC DEMO
P7505-4 4 GND
P7505-5 5 SYNC
P7505-6 6 I²C SIRIAL DATA
P7505-7 7 I²C SIRIAL CLOCK
P7505-8 8 TUNER 12V Ⓛ
P7602 (TO VPS)
P7801-1 1 I²C SIRIAL CLOCK
P7801-2 2 I²C SIRIAL DATA
P7801-3 3 REG 12.3V
P7801-4 4 5V
P7801-5 5 GND
P7801-6 6 VIDEO
P7801-7 7 GND
TO POWER SUPPLY
TUNER 12V
+5V
TO LUMINANCE & CHROMINANCE
VIDEO OUT
VIDEO OUT
AUDIO OUT
TUNER & TV DEMODULATOR SECTION IN MAIN C.B.A (VEP03336B)
1 GND
2 VIDEO OUT
3 12V +B
4 AUDIO OUT
5 SYNC Ⓛ
6 AUDIO DEF
7 GND
8 AFC OUT
9 AFC DEF
10 AGC OUT
11 U.AGC BIAS
12 V.AGC BIAS
13 GND
14 GND
15 IF IN
16 GND
IC751 AN5215
(SIF DETECTOR)
SIF AMP LIMITER
FM DET
R752 22 1/4W
T751 EIS7E006A
SIF INPUT
C753 82P
C754 0.047
C755 16V47
C756 39P
C757 12P
T752 EIS7E006B
SIF DET
C758 16V10
R753 330
C759 0.1
VR751 10KB
Q761 2SD636(Q,R,S,T) (AUDIO MUTE)
D761 MA27WA or MA27WB
R7657 100K
C7654 0.01
R7656 150
C7653 3900P
C7651 16V33
MUTING FREQ.
VR7660 2KB
AUDIO LEVEL
R7654 5600
R7655 4700
R746 150
C766 0.1
C712 16V10
R748 47
R762 10K
R747 1K
R734 39K
R735 47K
SYNC SEPARATOR
NOISE GATE
H. OSC
H.AFC
L705 33
VR741 20KB
R742 1800 ±2%
C742 39P
U.AGC
C765 150P
L761 3.3μ
2SD636
2SD637
TV DEMODULATOR PACK C.B.A (VEP07312C)

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE
SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

IMP
COM
WHE

M

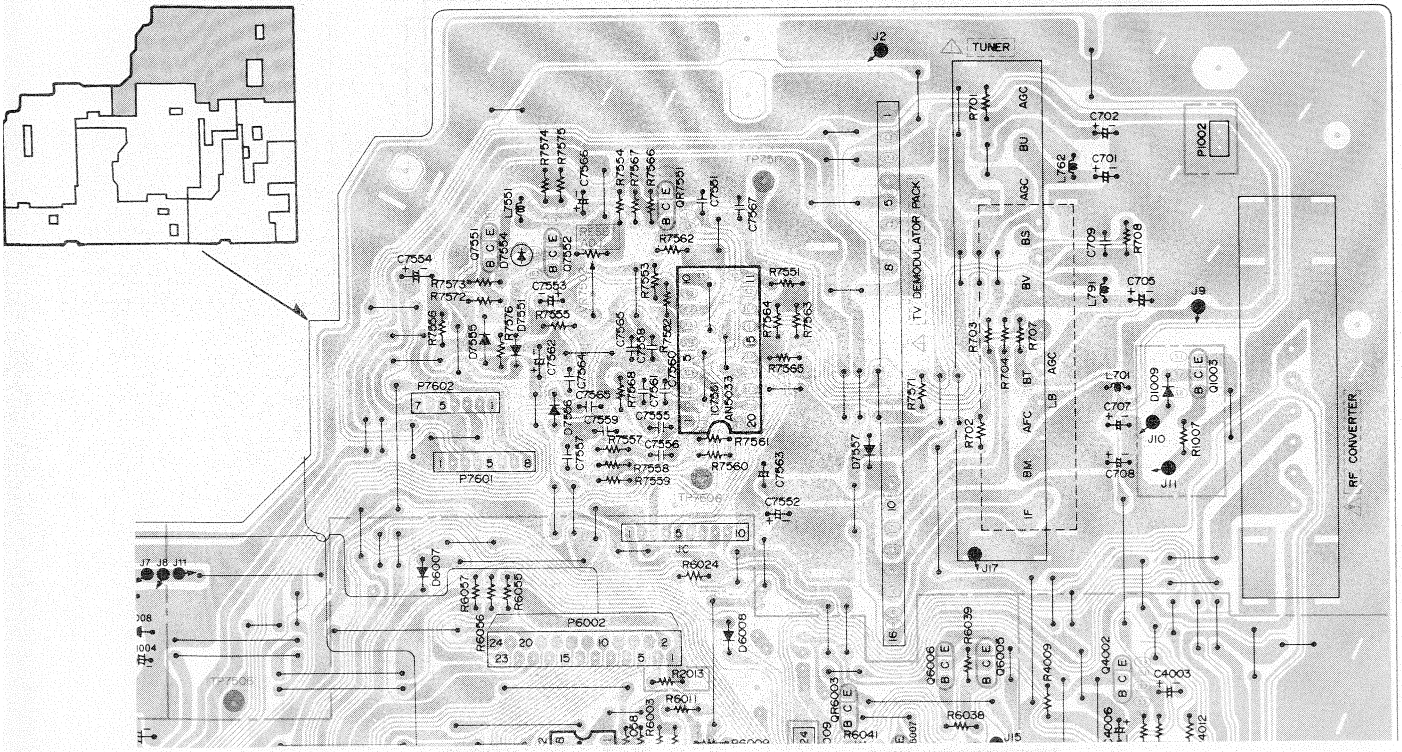

VIDEO LOOP
AUDIO LOOP
TO LUMINANCE & CHROMINANCE
NON SW 12V
VIDEO IN
CONVERTER +B
AUDIO IN
TO TIMER
RESET
DAC
PCLA
COM Ⓛ
COM Ⓗ
CH SELECT VR
+30V
GND
TO POWER SUPPLY
REG 6V
UNREG 45V
REG 12.3V
GND
TO TIMER
VHF
UHF
AFC DEF
AUDIO DEF
Q7551 2SB644
Q7552 2SB644
D7551 MA165
D7556 MA165
D7555 MA27WB
D7554 LN28 WPVT
D7557 MA165
TP7508
TP7506
TP7517
(REG 30V)
GND
VIDEO OUT
12V +B
AUDIO OUT
SYNC Ⓛ
AUDIO DEF
GND
AFC OUT
AFC DEF
AGC OUT
U.AGC BIAS
V.AGC BIAS
GND
GND
IF IN
GND
TO POWER SUPPLY
TUNER 12V
+5V
TO LUMINANCE & CHROMINANCE
VIDEO OUT
VIDEO OUT
AUDIO OUT
IC751 AN5215
(SIF DETECTOR)
SIF AMP LIMITER
FM DET
SIF INPUT
SIF DET
T751 EIS7E006A
T752 EIS7E006B
VR751 10KB
Q761 2SD636(Q,R,S,T) (AUDIO MUTE)
D761 MA27WA or MA27WB
IC7651 AN5421
SYNC SEPARATOR
NOISE GATE
H. OSC
H.AFC
VOLTAGE COMPARATOR
SHOOTHING CIRCUIT
OUTPUT AMP
MUTING FREQ.
AUDIO LEVEL
HIGH PEAKER
32.4MHz TRAP
T705 ELM7A4101Y
Q702 2SB641(Q,R,S,T) 2SA564(Q,R,S,T) 2SA733(Q,R,S,T) (AMP)
Q703 2SD636(S,T) 2SD637(S,T) (AMP)
QR7651 DTC114EA or UN1211 (AUDIO MUTE : ON)
Q7651 2SD636 (R,S,T) 2SC1684 (R,S,T) 2SC828 (R,S,T) (AMP)
T701 EULHLS310 (IF MATCHING TRANSFORMER)
IC701 BN5115B
REV
FOR
RF AGC
1ST AMP
2ND AMP
3RD AMP
AGC DET
NC AGC
BNC
AMP
SW AFT
P SHIFT
C AMP
PRE AMP
SIF DET
U.AGC
V.AGC
VR701 200B
VR702 200B
D711 MA165
D712 MA165
T702 ELM7A4101Y
AUDIO TRAP
T703 EIV7E016F
DET. ADJ
T704 EIV7E016E
AFC DET.
X703 EFCS5R5MW3 VLF0182 (5.5MHz TRAP)
X702 EFCS5R5MS4 VLF0178 (5.5MHz B.P.F)
TP703
TP704
TP705
TP706
TP707
TP709
TP7651
⚠ TV DEMODULATOR PACK C.B.A (VEP07312C)

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING.
THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE
SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

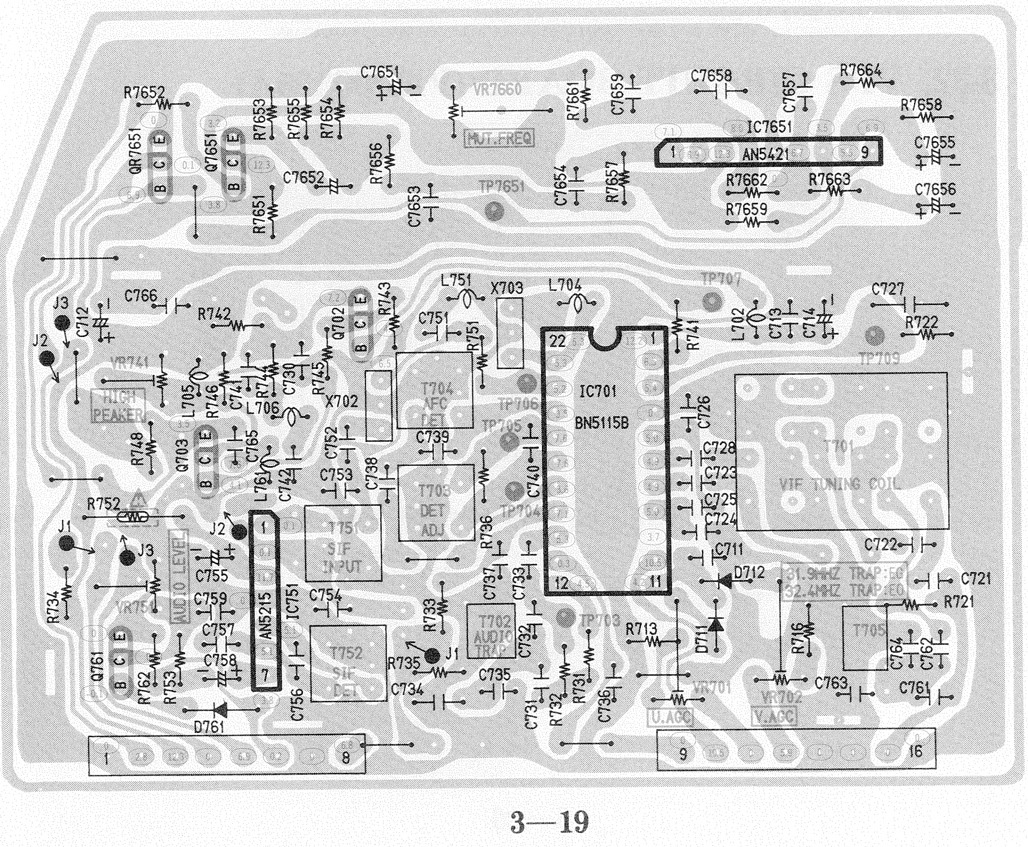
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

3-29. TUNER & TV DEMODULATOR Section In Main Circuit Board (VEP03336B)



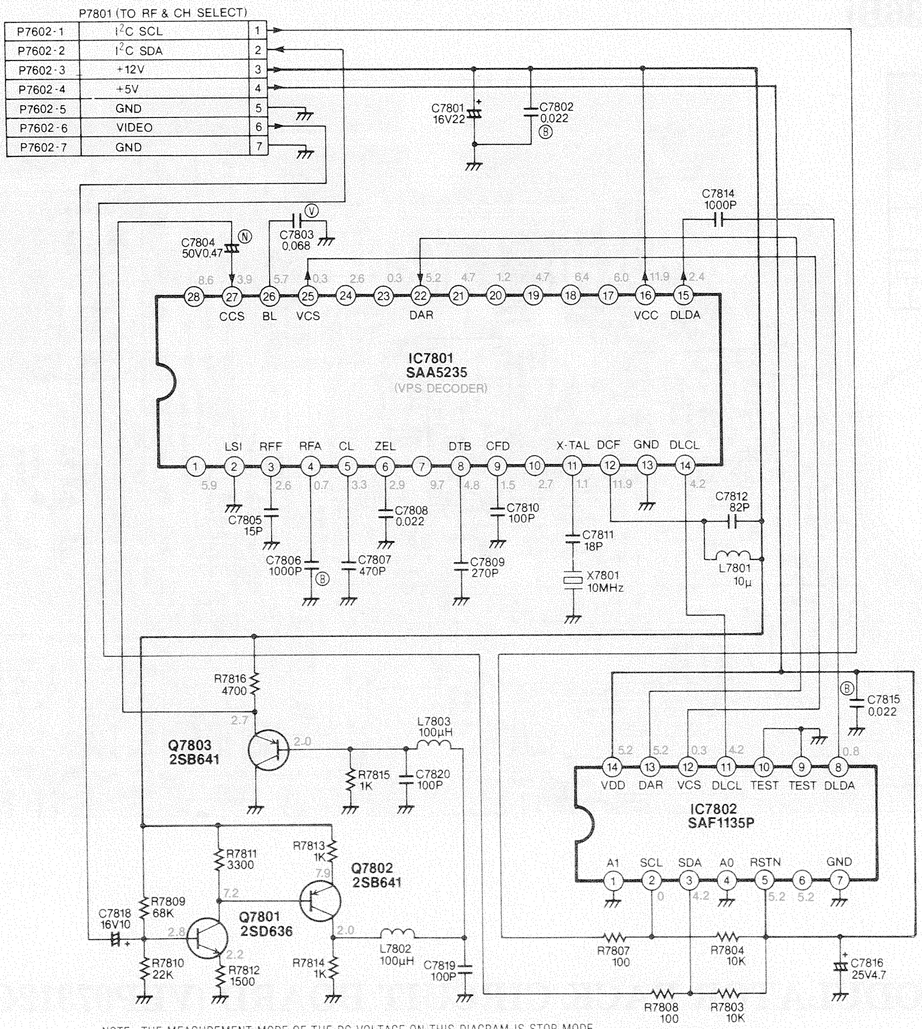
TUNER
AGC
BU
BS
BV
LB
AFC
BT
BM
IF
TV DEMODULATOR PACK
RF CONVERTER
P1002
J2
J9
J10
J11
J17
J7
J8
J15
C702
C701
C709
C705
C707
C708
L762
L791
L701
R701
R702
R703
R704
R707
R708
R1007
D1009
Q1003
B C E
TP7517
TP7506
TP7505
IC7551 AN5033
Q7551
QR7551
Q7552
D7554
D7555
D7556
D7557
D7551
L7551
R7551
R7552
R7553
R7554
R7555
R7556
R7557
R7558
R7559
R7560
R7561
R7562
R7563
R7564
R7565
R7566
R7567
R7568
R7571
R7572
R7573
R7574
R7575
R7576
C7551
C7552
C7553
C7554
C7555
C7556
C7557
C7558
C7559
C7560
C7561
C7562
C7563
C7564
C7565
C7566
C7567
RESET
VR7502
P7601
P7602
P6002
JC
R6024
R6055
R6056
R6057
D6007
D6008
R2013
R6011
R6003
Q6006
Q6005
QR6003
R6039
R6038
R6041
R4009
Q4002
C4003

3-30. TV DEMODULATOR PACK CIRCUIT BOARD (VEP07312C)



R7652
QR7651
Q7651
B C E
R7653
R7655
R7654
R7651
C7651
C7652
C7653
C7654
VR7660
MUT.FREQ
R7656
R7661
C7659
R7657
TP7651
C7658
C7657
R7664
R7658
IC7651
AN5421
1
9
R7662
R7663
R7659
C7655
C7656
J3
J2
J1
C712
C766
R742
Q702
R743
L751
X703
L704
TP707
C727
L702
C713
C714
R741
R722
TP709
VR741
HIGH PEAKER
L705
R746
C741
R744
C730
R745
X702
L706
C751
R751
T704 AFC DET
TP706
TP705
IC701
BN5115B
22
12
11
C726
T701
VIF TUNING COIL
R748
Q703
C765
L761
C742
C752
C753
C738
C739
T703 DET ADJ
C740
TP704
C728
C723
C725
C724
R752
AUDIO LEVEL
VR751
C755
C759
C757
C758
IC751
AN5215
7
T751 SIF INPUT
C754
T752 SIF DET
R736
C737
C733
C711
D712
31.9MHZ TRAP:EG
32.4MHZ TRAP:EG
C722
C721
R721
R734
Q761
R762
R753
D761
C756
R733
R735
T702 AUDIO TRAP
C732
C735
C734
TP703
C731
R732
R731
C736
R713
D711
VR701
U.AGC
R716
T705
C763
VR702
V.AGC
C764
C762
C761
1
8
9
16

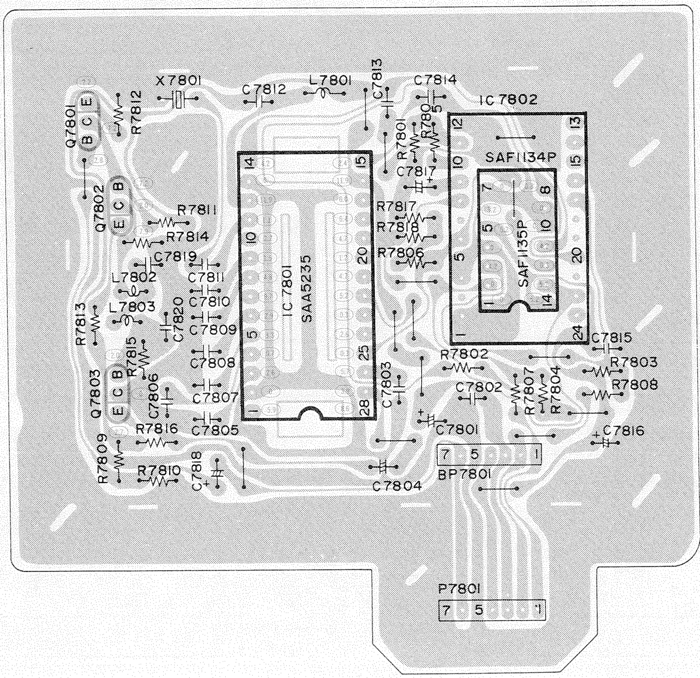
3-31. VPS SCHEMATIC DIAGRAM


P7801 (TO RF & CH SELECT)
P7602-1 I2C SCL 1
P7602-2 I2C SDA 2
P7602-3 +12V 3
P7602-4 +5V 4
P7602-5 GND 5
P7602-6 VIDEO 6
P7602-7 GND 7
C7801 16V22
C7802 0.022
C7814 1000P
C7804 50V0.47
C7803 0.068
IC7801
SAA5235
(VPS DECODER)
CCS
BL
VCS
DAR
VCC
DLDA
LSI
RFF
RFA
CL
ZEL
DTB
CFD
X-TAL
DCF
GND
DLCL
C7805 15P
C7806 1000P
C7807 470P
C7808 0.022
C7809 270P
C7810 100P
C7811 18P
X7801 10MHz
C7812 82P
L7801 10µ
R7816 4700
Q7803 2SB641
L7803 100µH
R7815 1K
C7820 100P
R7811 3300
R7813 1K
Q7802 2SB641
R7809 68K
C7818 16V10
Q7801 2SD636
R7810 22K
R7812 1500
R7814 1K
L7802 100µH
C7819 100P
IC7802
SAF1135P
VDD
DAR
VCS
DLCL
TEST
TEST
DLDA
A1
SCL
SDA
A0
RSTN
GND
C7815 0.022
R7807 100
R7804 10K
C7816 25V4.7
R7808 100
R7803 10K

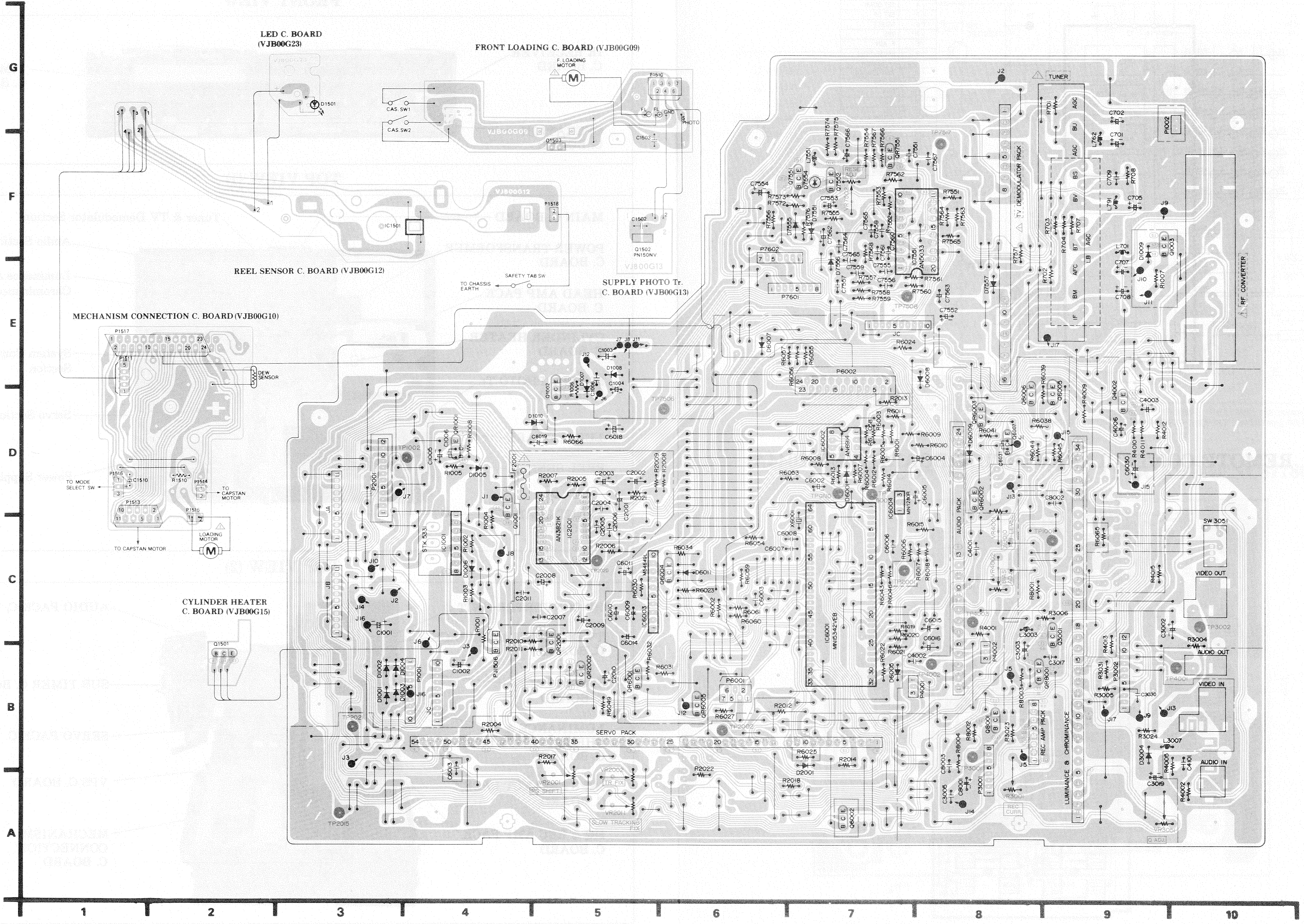
NOTE: THE MEASUREMENT MODE OF THE DC VOLTAGE ON THIS DIAGRAM IS STOP MODE.

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

3-32. VPS CIRCUIT BOARD (VEP06365A)


X7801
C7812
L7801
C7813
C7814
IC7802
Q7801
R7812
Q7802
R7811
R7814
C7819
L7802
L7803
R7813
C7820
C7811
C7810
C7809
C7808
R7815
Q7803
C7806
C7807
R7816
C7805
R7809
R7810
C7818
IC7801
SAA5235
R7801
R7805
C7817
R7817
R7818
R7806
SAF1134P
SAF1135P
C7815
R7802
R7803
R7808
C7802
R7807
R7804
C7803
C7801
C7816
C7804
BP7801
P7801

3-33. MAIN CIRCUIT BOARD (VEP03336B)


LED C. BOARD (VJB00G23)
FRONT LOADING C. BOARD (VJB00G09)
F. LOADING MOTOR
CAS. SW1
CAS. SW2
REEL SENSOR C. BOARD (VJB00G12)
SUPPLY PHOTO Tr. C. BOARD (VJB00G13)
SAFETY TAB SW
TO CHASSIS EARTH
MECHANISM CONNECTION C. BOARD (VJB00G10)
DEW SENSOR
TO MODE SELECT SW
TO CAPSTAN MOTOR
LOADING MOTOR
CYLINDER HEATER C. BOARD (VJB00G15)
TUNER
TV DEMODULATOR PACK
RF CONVERTER
AUDIO PACK
SERVO PACK
REC. AMP PACK
LUMINANCE & CHROMINANCE
IC6001 MN15342VEB
AN3821K IC2001
STK 5331 IC1001
AN6914
AN5033 IC7551
M54641L
SW3051
VIDEO OUT
AUDIO OUT
VIDEO IN
AUDIO IN
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10

MAIN CIRCUIT BOARD ADDRESS INFORMATION

POWER SUPPLY SECTION	
Transistor	
Q1001	D-4
Q1002	D-5
Q1003	F-9
Q1501	B-2
Transistor & Resistor	
QR1001	D-4
Integrated Circuit	
IC1001	C-4
Test Point	
TP1001	C-9
TP1002	D-4

ADDRESS INFORMATION

SERVO SECTION	
Transistor & Resistor	
QR2001	B-5
QR2002	B-5
Integrated Circuit	
IC2001	C-5
Test Point	
TP2001	C-7
TP2002	B-6
TP2015	A-3
TP2020	C-5
TP2021	B-3
Adjustment	
VR2001	A-5
VR2002	A-5
VR2011	A-5

ADDRESS INFORMATION

LUMINANCE & CHROMINANCE SECTION	
Transistor	
Q3001	C-9
Q8001	B-8
Transistor & Resistor	
QR8001	B-9
Test Point	
TP3001	B-8
TP3002	C-10
Adjustment	
VR3001	A-8
VR3051	A-9

ADDRESS INFORMATION

TUNER & TV DEMODULATOR SECTION	
Transistor	
Q7551	F-7
Q7552	F-7
Transistor & Resistor	
QR7551	F-7
Integrated Circuit	
IC7551	F-7
Test Point	
TP7506	D-6
TP7508	E-7
TP7517	F-8
Adjustment	
VR7502	F-7

ADDRESS INFORMATION

SYSTEM CONTROL SECTION	
Transistor	
Q1502	F-5
Q1503	F-5
Q6002	A-7
Q6004	C-6
Q6005	D-9
Q6006	D-8
Q6007	D-8
Transistor & Resistor	
QR6001	B-5
QR6002	D-8
QR6003	D-8
QR6005	B-6
Integrated Circuit	
IC1501	F-3
IC6001	C-7
IC6002	D-7
IC6003	C-5
IC6004	D-7
Test Point	
TP GND	D-7
TP6001	D-7

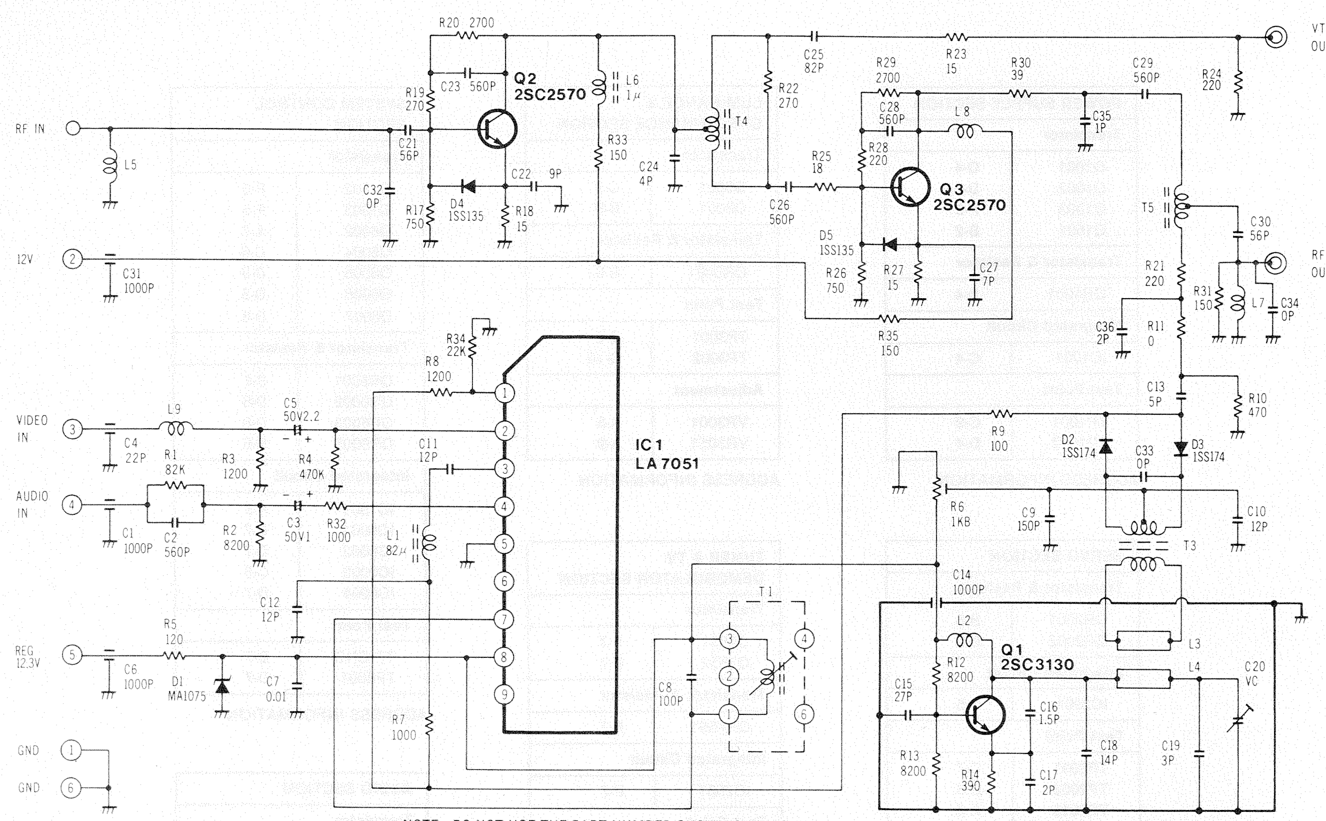
ADDRESS INFORMATION

AUDIO SECTION	
Transistor	
Q4002	D-9
Test Point	
TP4001	B-10
TP4002	B-8
TP4003	C-8
Adjustment	
VR4001	C-8
VR4002	C-8

ADDRESS INFORMATION

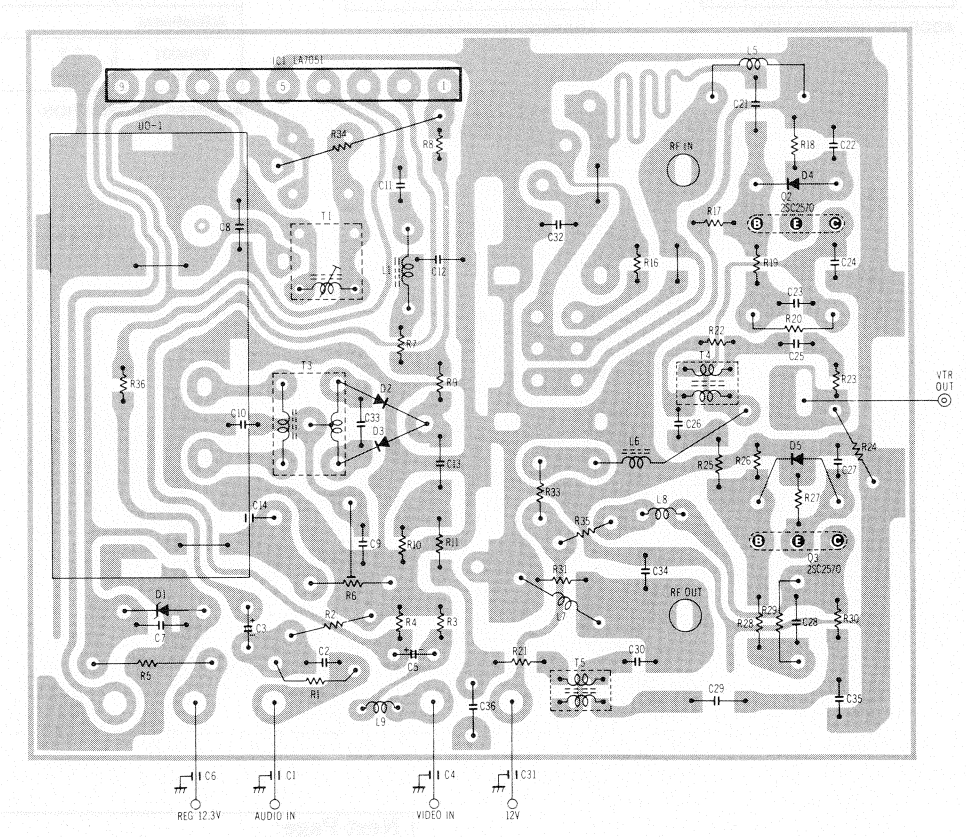
Next Page:
RF CONVERTER, REMOTE CONTROLLER &
CIRCUIT BOARD LAYOUT Section

3-34. RF CONVERTER SCHEMATIC DIAGRAM

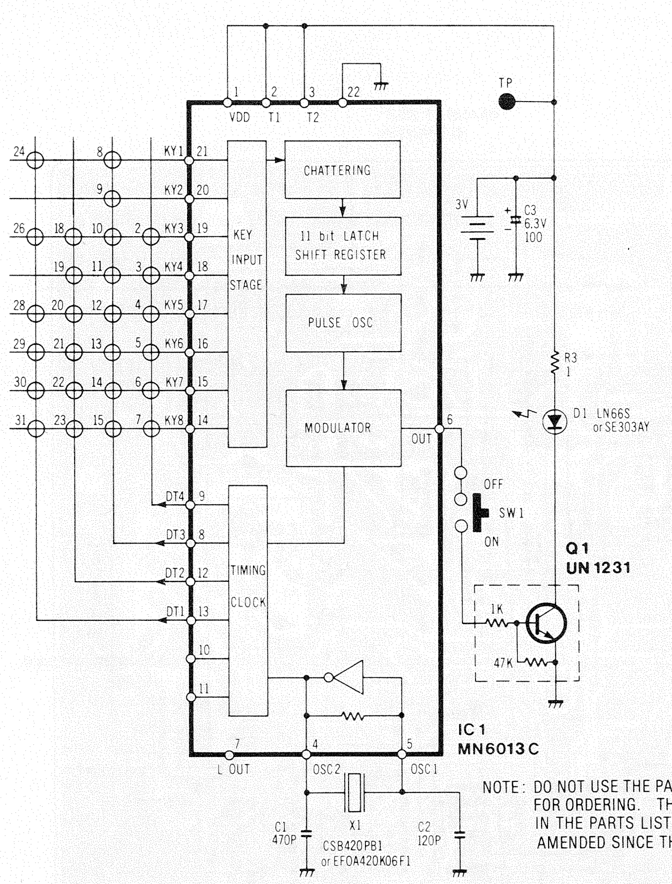

RF IN
12V
VIDEO IN
AUDIO IN
REG 12.3V
GND
GND
VTR OUT
RF OUT
Q2 2SC2570
Q3 2SC2570
Q1 2SC3130
IC1 LA7051
D1 MA1075
D2 1SS174
D3 1SS174
D4 1SS135
D5 1SS135
T1
T3
T4
T5
L1 82μ
L2
L3
L4
L5
L6 1μ
L7
L8
L9
C20 VC

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

3-35. RF CONVERTER CIRCUIT BOARD (ENC87786)


IC1 LA7051
UO-1
RF IN
RF OUT
VTR OUT
Q2 2SC2570
Q3 2SC2570
REG 12.3V
AUDIO IN
VIDEO IN
12V

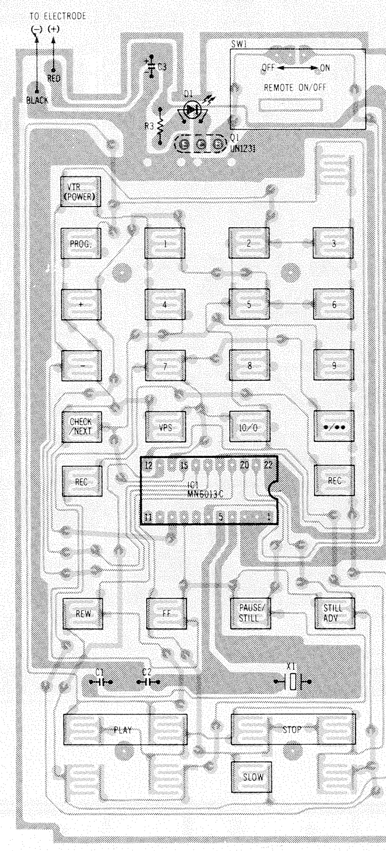
3-36. REMOTE CONTROLLER SCHEMATIC DIAGRAM


VDD
T1
T2
TP
KEY INPUT STAGE
CHATTERING
11 bit LATCH SHIFT REGISTER
PULSE OSC
MODULATOR
OUT
TIMING CLOCK
L OUT
OSC2
OSC1
3V
C3 6.3V 100
R3 1
D1 LN66S or SE303AY
OFF
SW1
ON
Q1 UN1231
1K
47K
IC1 MN6013C
X1 CSB420PB1 or EF0A420K06F1
C1 470P
C2 120P

KEY NO.	FUNCTION
3	PROGRAM
4	SET DOWN
5	SET UP
6	SELECT
7	VPS
8	F. ADV
9	PAUSE/STILL
10	FF/SEARCH
11	REW/SEARCH
12	POWER
13	CH 1
14	CH 4
15	CH 7
18	STOP
19	PLAY
20	CH 2
21	CH 5
22	CH 8
23	CH 10/0
24	REC
26	SLOW
28	CH 3
29	CH 6
30	CH 9
31	•/••

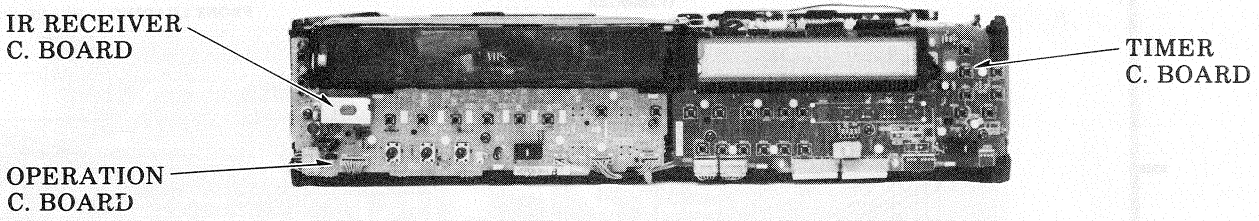
NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

3-37. REMOTE CONTROLLER CIRCUIT BOARD (VEP22044A)

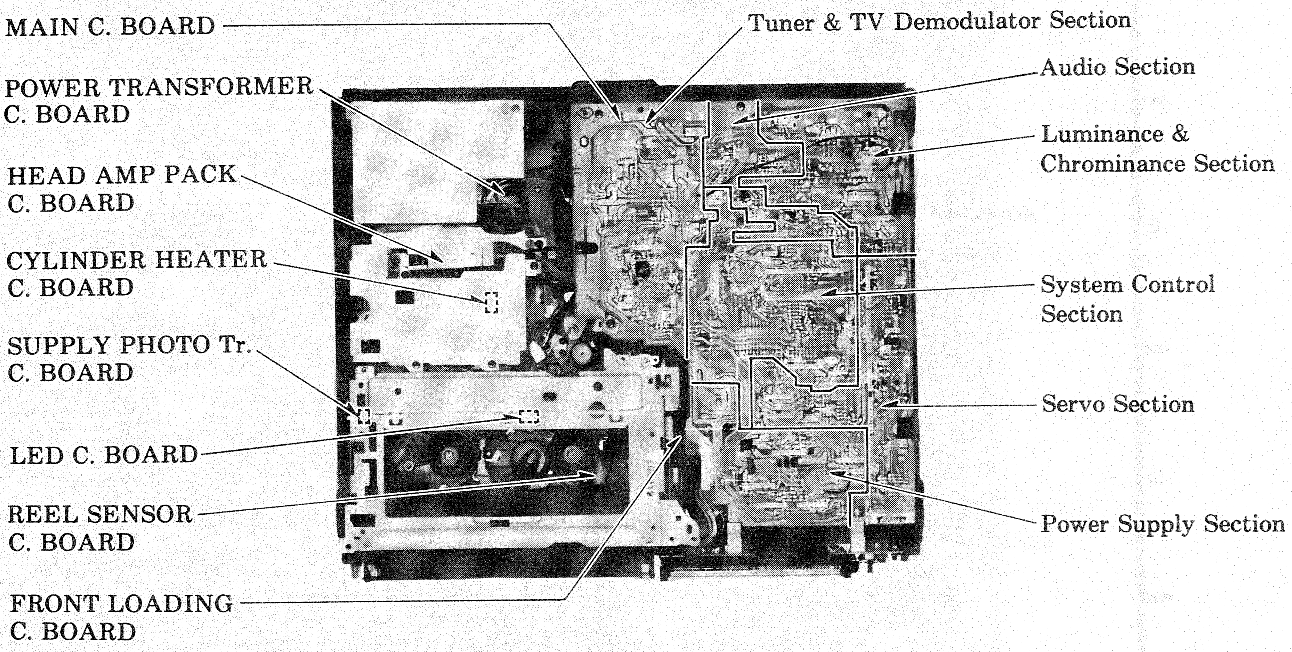

TO ELECTRODE
RED
BLACK
SW1
OFF ON
REMOTE ON/OFF
Q1 UN1231
VTR (POWER)
PROG.
CHECK /NEXT
VPS
10/0
•/••
REC
IC1 MN6013C
REW
FF
PAUSE/ STILL
STILL ADV
X1
PLAY
STOP
SLOW

3-38. CIRCUIT BOARD LAYOUT

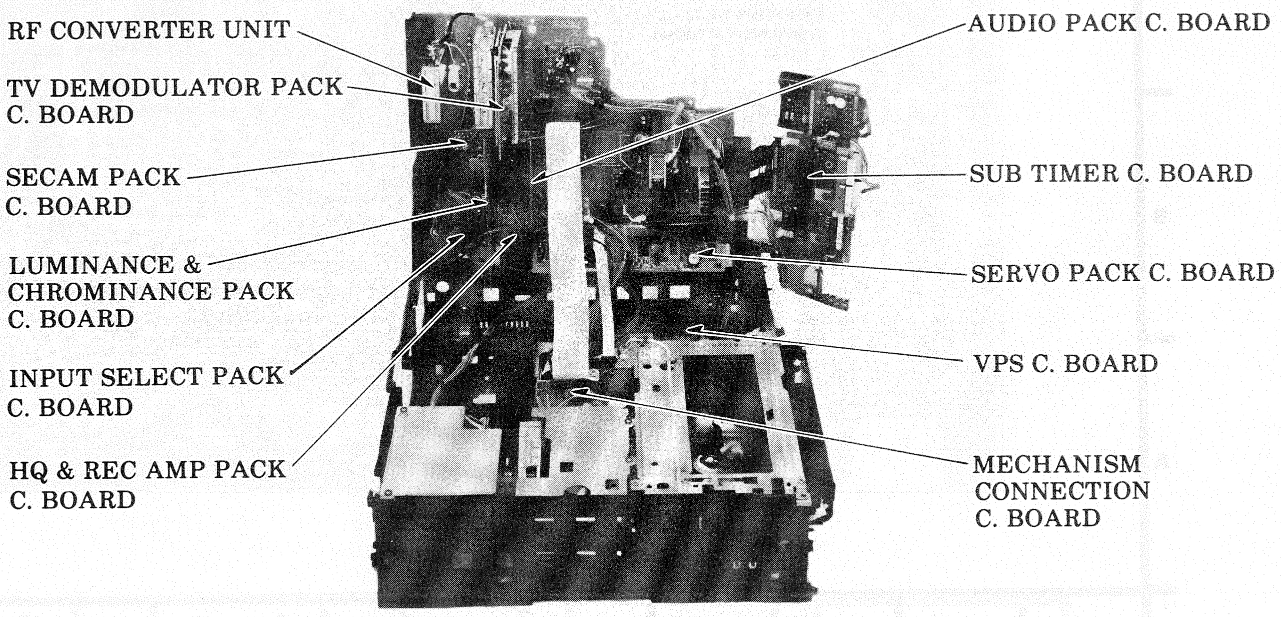
FRONT VIEW


IR RECEIVER C. BOARD
OPERATION C. BOARD
TIMER C. BOARD

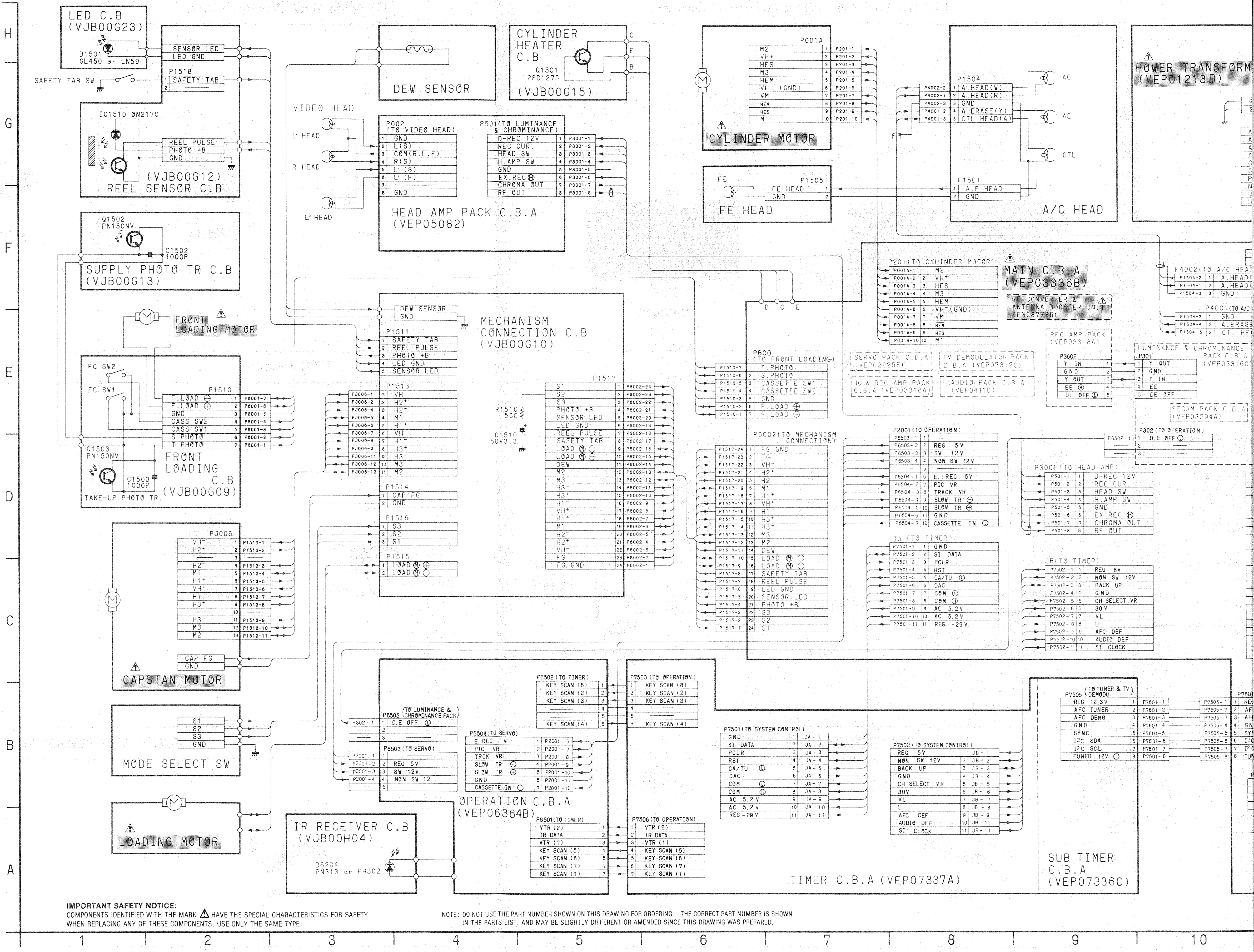
TOP VIEW (1)


MAIN C. BOARD
POWER TRANSFORMER C. BOARD
HEAD AMP PACK C. BOARD
CYLINDER HEATER C. BOARD
SUPPLY PHOTO Tr. C. BOARD
LED C. BOARD
REEL SENSOR C. BOARD
FRONT LOADING C. BOARD
Tuner & TV Demodulator Section
Audio Section
Luminance & Chrominance Section
System Control Section
Servo Section
Power Supply Section

TOP VIEW (2)

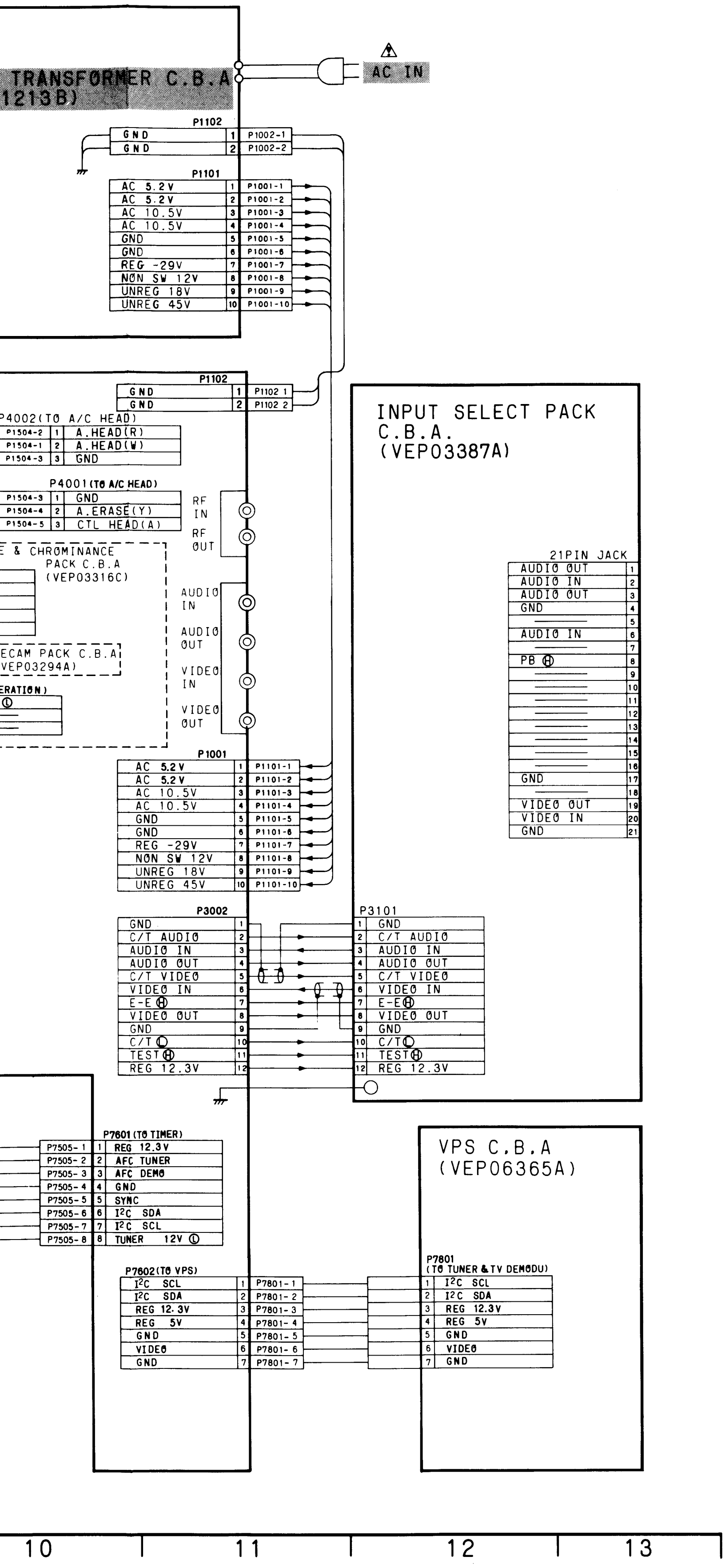

RF CONVERTER UNIT
TV DEMODULATOR PACK C. BOARD
SECAM PACK C. BOARD
LUMINANCE & CHROMINANCE PACK C. BOARD
INPUT SELECT PACK C. BOARD
HQ & REC AMP PACK C. BOARD
AUDIO PACK C. BOARD
SUB TIMER C. BOARD
SERVO PACK C. BOARD
VPS C. BOARD
MECHANISM CONNECTION C. BOARD

3-39. INTERCONNECTION SCHEMATIC DIAGRAM


LED C.B (VJB00G23)
D1501 GL450 or LN59
SAFETY TAB SW
P1518
SENSOR LED
LED GND
SAFETY TAB
IC1510 ON2170
REEL PULSE
PHOTO +B
GND
(VJB00G12)
REEL SENSOR C.B
Q1502 PN150NV
C1502 1000P
SUPPLY PHOTO TR C.B (VJB00G13)
FRONT LOADING MOTOR
FC SW2
FC SW1
P1510
F.LOAD ⊖
F.LOAD ⊕
CASS SW2
CASS SW1
S PHOTO
T PHOTO
Q1503 PN150NV
C1503 1000P
TAKE-UP PHOTO TR.
FRONT LOADING C.B (VJB00G09)
PJ006
CAPSTAN MOTOR
CAP FG
MODE SELECT SW
S1
S2
S3
LOADING MOTOR
DEW SENSOR
VIDEO HEAD
L' HEAD
R HEAD
P002 (TO VIDEO HEAD)
P501 (TO LUMINANCE & CHROMINANCE)
D-REC 12V
REC CUR.
HEAD SW
H.AMP SW
EX.REC ⊕
CHROMA OUT
RF OUT
HEAD AMP PACK C.B.A (VEP05082)
CYLINDER HEATER C.B
Q1501 2SD1275
(VJB00G15)
MECHANISM CONNECTION C.B (VJB00G10)
P1511
P1513
P1514
P1516
P1515
P1517
R1510 560
C1510 50V3.3
IR RECEIVER C.B (VJB00H04)
D6204 PN313 or PH302
OPERATION C.B.A (VEP06364B)
P6505 (TO LUMINANCE & CHROMINANCE PACK)
P6503 (TO SERVO)
P6504 (TO SERVO)
P6502 (TO TIMER)
P6501 (TO TIMER)
KEY SCAN
CYLINDER MOTOR
P001A
FE HEAD
P1505
P1504
P1501
A/C HEAD
AC
AE
CTL
A.HEAD(W)
A.HEAD(R)
A.ERASE(Y)
CTL HEAD(A)
A.E HEAD
MAIN C.B.A (VEP03336B)
RF CONVERTER & ANTENNA BOOSTER UNIT (ENC87786)
REC AMP PACK (VEP03318A)
SERVO PACK C.B.A (VEP02225E)
TV DEMODULATOR PACK C.B.A (VEP07312C)
HQ & REC AMP PACK C.B.A (VEP03318A)
AUDIO PACK C.B.A (VEP04110)
LUMINANCE & CHROMINANCE PACK C.B.A (VEP03316C)
SECAM PACK C.B.A (VEP03294A)
P201 (TO CYLINDER MOTOR)
P6001 (TO FRONT LOADING)
P6002 (TO MECHANISM CONNECTION)
P2001 (TO OPERATION)
P3001 (TO HEAD AMP)
P302 (TO OPERATION)
JA (TO TIMER)
JB (TO TIMER)
P4002 (TO A/C HEAD)
P4001 (TO A/C HEAD)
TIMER C.B.A (VEP07337A)
P7503 (TO OPERATION)
P7506 (TO OPERATION)
P7501 (TO SYSTEM CONTROL)
P7502 (TO SYSTEM CONTROL)
SUB TIMER C.B.A (VEP07336C)
P7505 (TO TUNER & TV DEMODU.)
POWER TRANSFORMER (VEP01213B)
H
G
F
E
D
C
B
A
1
2
3
4
5
6
7
8
9
10

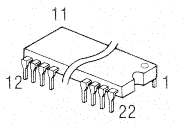
IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

NOTE: DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER IS SHOWN IN THE PARTS LIST, AND MAY BE SLIGHTLY DIFFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

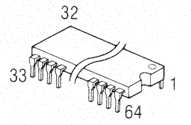

AC IN
TRANSFORMER C.B.A
1213B)
P1102
GND 1 P1002-1
GND 2 P1002-2
P1101
AC 5.2V 1 P1001-1
AC 5.2V 2 P1001-2
AC 10.5V 3 P1001-3
AC 10.5V 4 P1001-4
GND 5 P1001-5
GND 6 P1001-6
REG -29V 7 P1001-7
NON SW 12V 8 P1001-8
UNREG 18V 9 P1001-9
UNREG 45V 10 P1001-10
P1102
GND 1 P1102 1
GND 2 P1102 2
P4002(TO A/C HEAD)
P1504-2 1 A.HEAD(R)
P1504-1 2 A.HEAD(W)
P1504-3 3 GND
P4001(TO A/C HEAD)
P1504-3 1 GND
P1504-4 2 A.ERASE(Y)
P1504-5 3 CTL HEAD(A)
RF IN
RF OUT
E & CHROMINANCE PACK C.B.A (VEP03316C)
AUDIO IN
AUDIO OUT
VIDEO IN
VIDEO OUT
ECAM PACK C.B.A
VEP03294A)
ERATION)
INPUT SELECT PACK C.B.A. (VEP03387A)
21PIN JACK
AUDIO OUT 1
AUDIO IN 2
AUDIO OUT 3
GND 4
5
AUDIO IN 6
7
PB Ⓗ 8
9
10
11
12
13
14
15
16
GND 17
18
VIDEO OUT 19
VIDEO IN 20
GND 21
P1001
AC 5.2V 1 P1101-1
AC 5.2V 2 P1101-2
AC 10.5V 3 P1101-3
AC 10.5V 4 P1101-4
GND 5 P1101-5
GND 6 P1101-6
REG -29V 7 P1101-7
NON SW 12V 8 P1101-8
UNREG 18V 9 P1101-9
UNREG 45V 10 P1101-10
P3002
GND 1
C/T AUDIO 2
AUDIO IN 3
AUDIO OUT 4
C/T VIDEO 5
VIDEO IN 6
E-E Ⓗ 7
VIDEO OUT 8
GND 9
C/T Ⓛ 10
TEST Ⓗ 11
REG 12.3V 12
P3101
1 GND
2 C/T AUDIO
3 AUDIO IN
4 AUDIO OUT
5 C/T VIDEO
6 VIDEO IN
7 E-E Ⓗ
8 VIDEO OUT
9 GND
10 C/T Ⓛ
11 TEST Ⓗ
12 REG 12.3V
P7601 (TO TIMER)
P7505-1 1 REG 12.3V
P7505-2 2 AFC TUNER
P7505-3 3 AFC DEMO
P7505-4 4 GND
P7505-5 5 SYNC
P7505-6 6 I2C SDA
P7505-7 7 I2C SCL
P7505-8 8 TUNER 12V Ⓛ
VPS C.B.A (VEP06365A)
P7602(TO VPS)
I2C SCL 1 P7801-1
I2C SDA 2 P7801-2
REG 12.3V 3 P7801-3
REG 5V 4 P7801-4
GND 5 P7801-5
VIDEO 6 P7801-6
GND 7 P7801-7
P7801
(TO TUNER & TV DEMODU)
1 I2C SCL
2 I2C SDA
3 REG 12.3V
4 REG 5V
5 GND
6 VIDEO
7 GND
10
11
12
13

Next Page:
ICs & TRANSISTORs INFORMATION Section

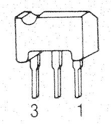
3-40. ICs & TRANSISTORs INFORMATION



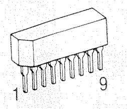
BN5115B
MN6178VAL



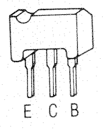
MN15342VEB
MN15881VDL
MN1514VDM



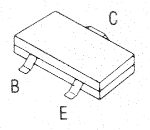
MN1280P
MN1280R



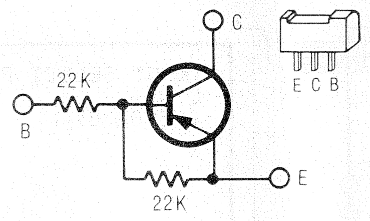
AN6913
AN5421
μPC1373H

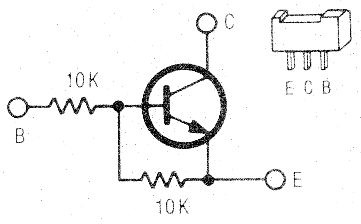


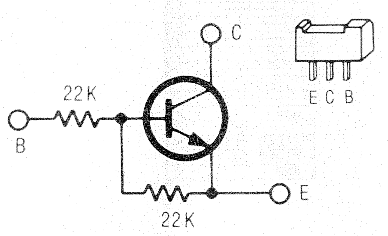
2SB641
2SB644
2SB790
2SC2206
2SD636
2SD637
2SD638

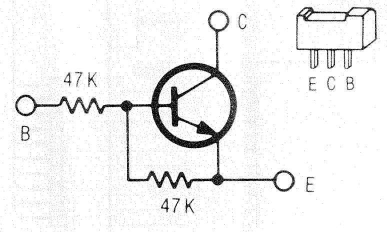


2SD601
2SD602
2SD1328
2SC2404

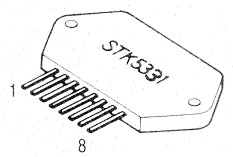

C
22K
B
22K
E
E C B
DTA124EA


C
10K
B
10K
E
E C B
DTC114EA

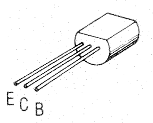

C
22K
B
22K
E
E C B
DTC124EA


C
47K
B
47K
E
E C B
DTC144EA

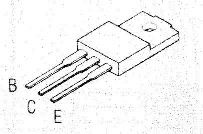
POWER Section



STK5331

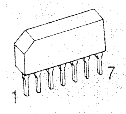


2SA684
2SC1384

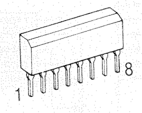


2SD1275

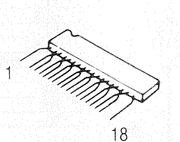
LUMINANCE & CHROMINANCE Section



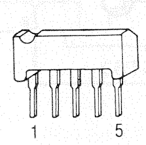
TA7347P



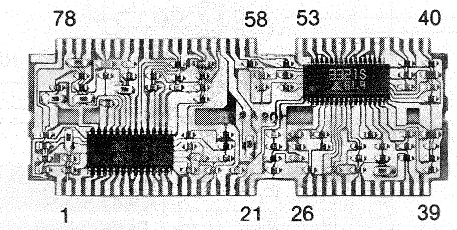
M5201L

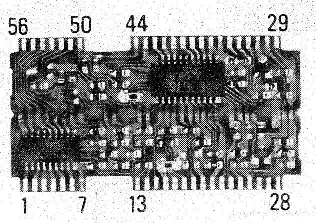


BA7025L

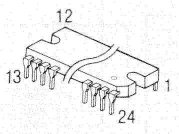


BA7004

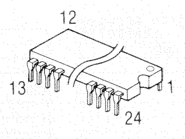

78
58
53
40
1
21
26
39
VEFY015


56
50
44
29
1
7
13
28
VEFC013

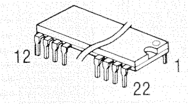
SERVO Section



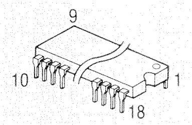
AN6387



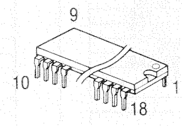
AN3821K



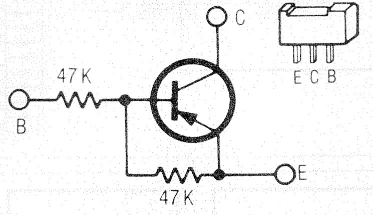
BA8420



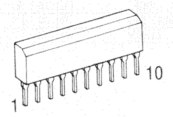
AN3795N



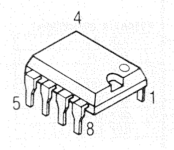
AN3792


C
47K
B
47K
E
E C B
DTA144EA

SYSTEM CONTROL Section

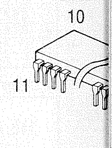


BA6248

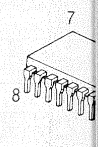


AN6914

TV D

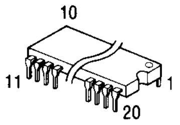


AN50

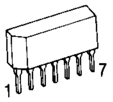


SAF11

TV DEMODULATOR Section

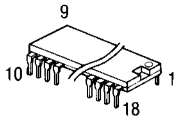


AN5033

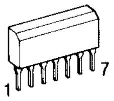


AN5215

AUDIO Section

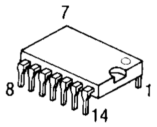


µPC1514CA

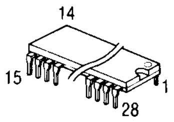


µPC1519HA

VPS Section

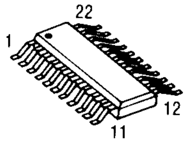


SAF1135P



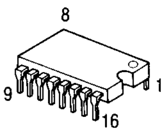
SAA5235

HEAD AMP Section

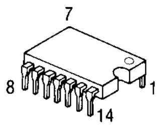


AN3311S

TIMER & SUB TIMER Section



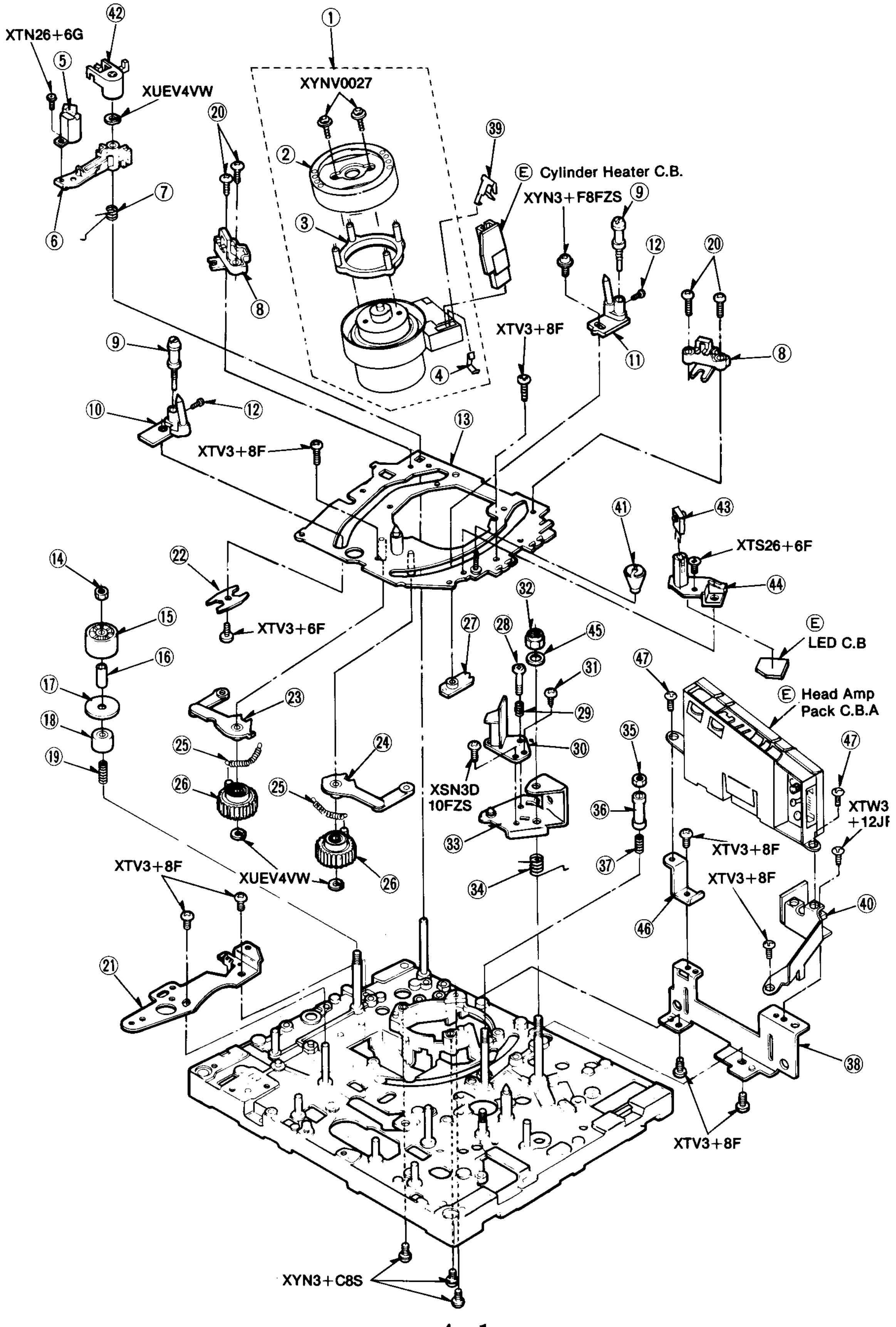
MN1220



MN4066B

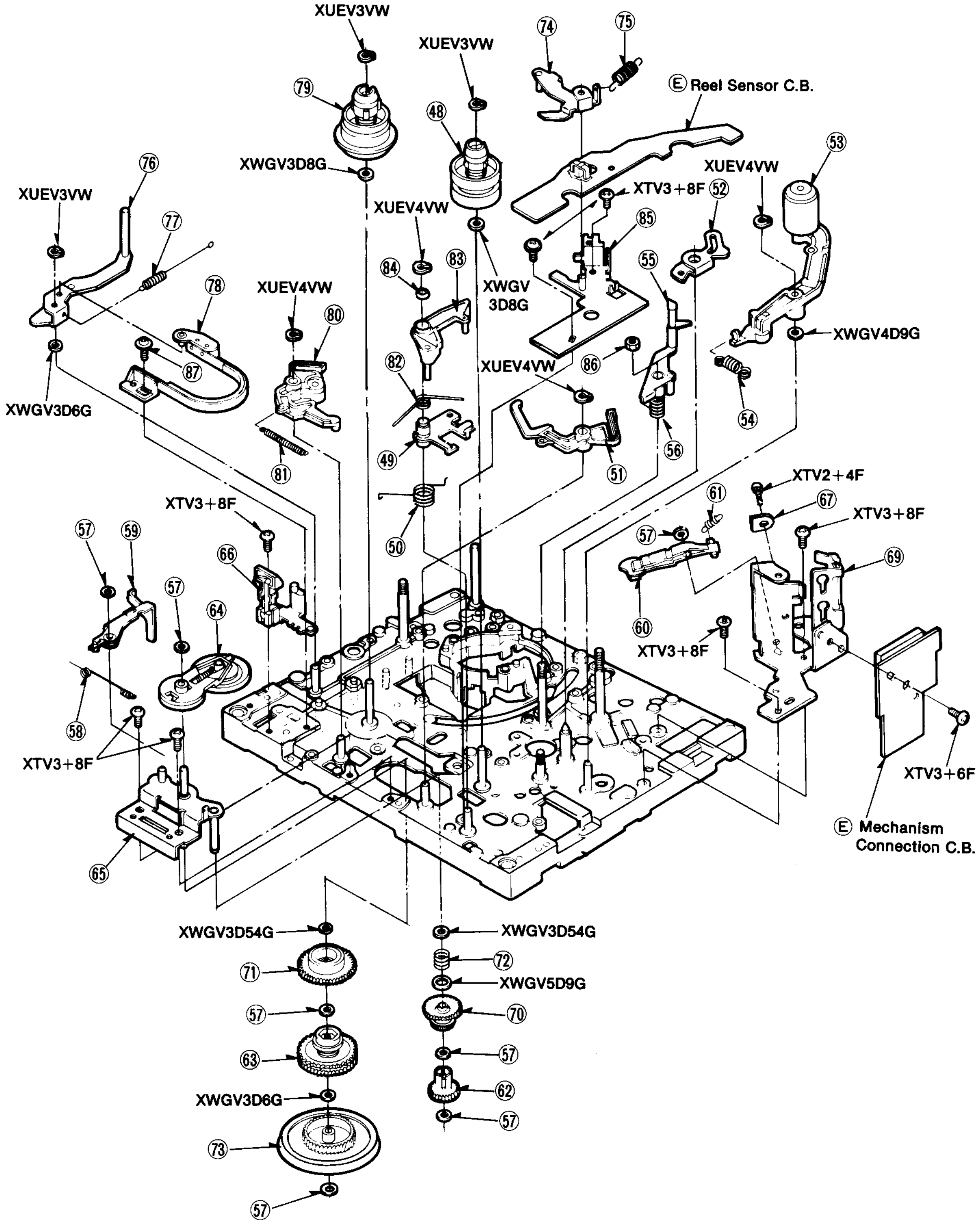
SECTION 4
EXPLODED VIEWS & PARTS LIST

4-1. EXPLODED VIEW ❶ TRANSPORT SECTION

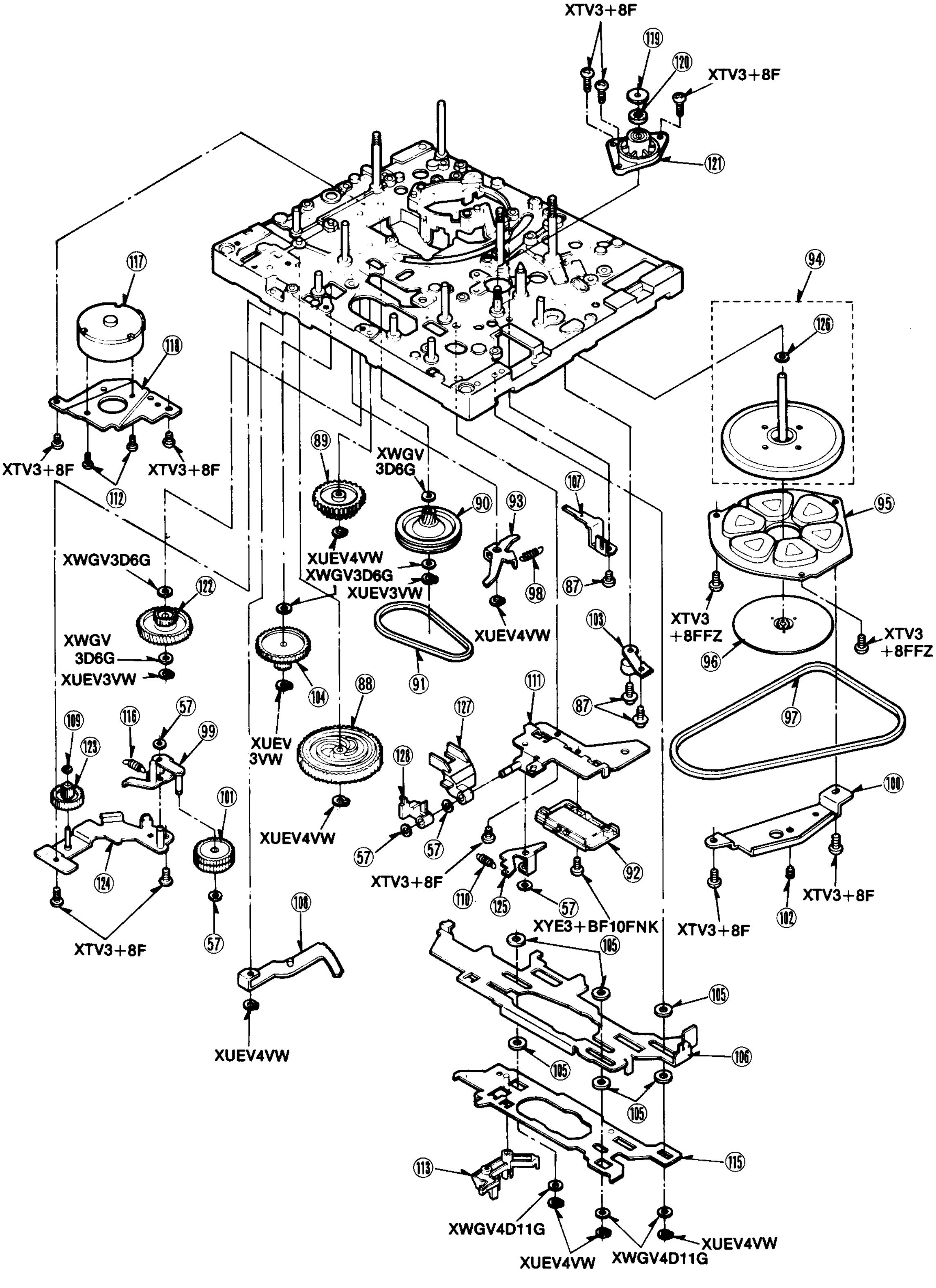


㊷
XTN26+6G
⑤
XUEV4VW
⑦
⑥
⑳
⑧
①
XYNV0027
②
③
④
㊴
Ⓔ Cylinder Heater C.B.
XYN3+F8FZS
⑨
⑫
⑳
⑪
⑧
XTV3+8F
⑨
⑩
⑫
XTV3+8F
⑬
㊶
㊸
XTS26+6F
㊹
Ⓔ LED C.B
⑭
⑮
⑯
⑰
⑱
⑲
㉒
XTV3+6F
㉓
㉕
㉖
XUEV4VW
㉔
㉕
㉖
㉗
㉘
㉜
㊺
㉛
㉙
㉚
XSN3D
10FZS
㉝
㉞
㉟
㊱
㊲
㊼
Ⓔ Head Amp
Pack C.B.A
㊼
XTW3
+12J
XTV3+8F
XTV3+8F
㊵
㊻
XTV3+8F
㉑
㊳
XTV3+8F
XYN3+C8S

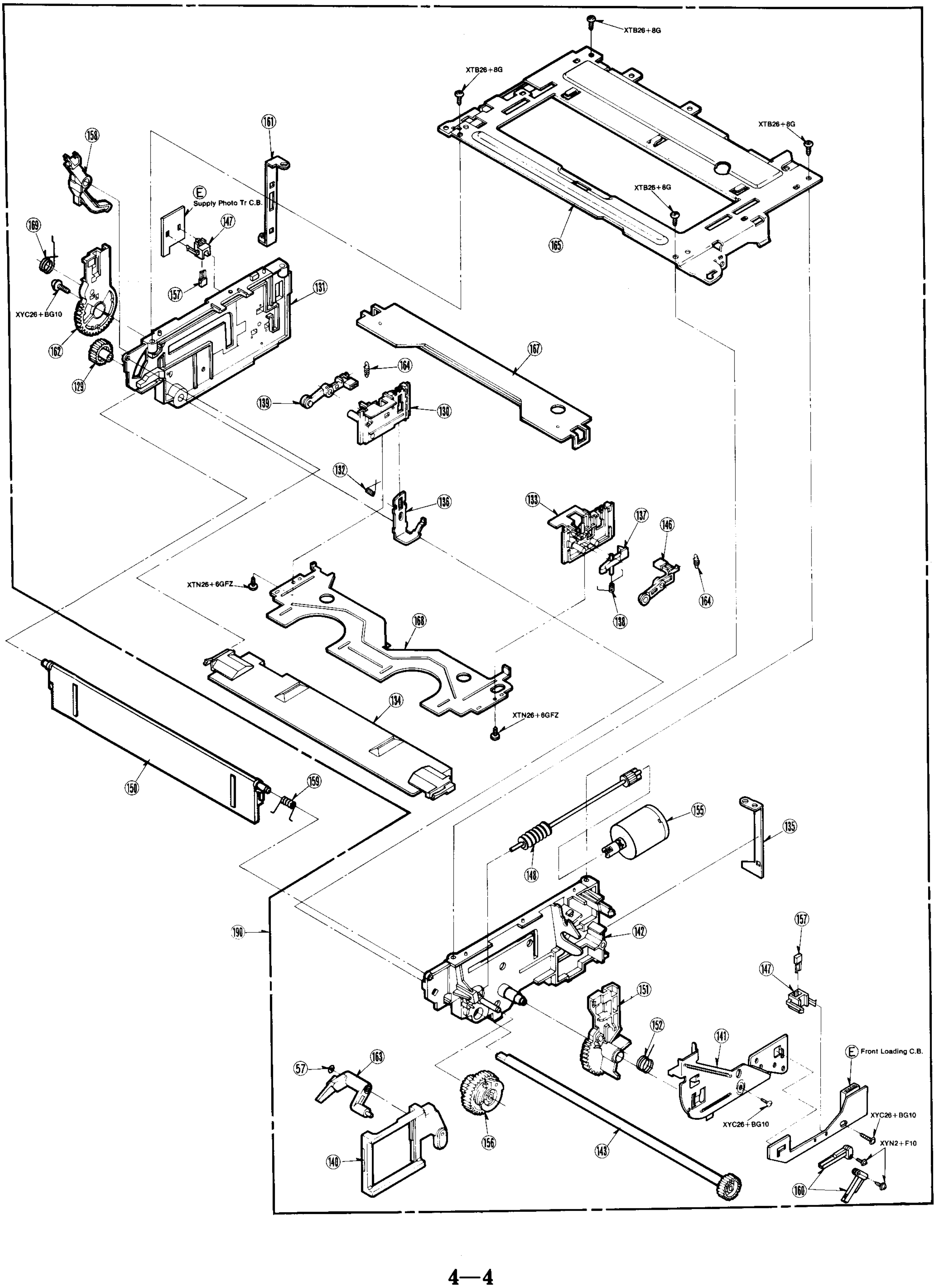
❷ MOVING MECHANISM SECTION


XUEV3VW
XUEV3VW
⑭
⑮
ⓔ Reel Sensor C.B.
⑲
㊽
XWGV3D8G
⑯
XUEV3VW
⑰
XUEV4VW
XTV3+8F
(52)
(53)
XUEV4VW
(85)
(84)
(83)
XWGV
3D8G
(55)
⑱
XUEV4VW
(80)
XWGV4D9G
(87)
(82)
XUEV4VW
(86)
XWGV3D6G
(54)
(49)
(51)
(56)
(81)
(50)
XTV2+4F
(61)
(67)
XTV3+8F
XTV3+8F
(57)
(59)
(66)
(57)
(69)
(57)
(64)
(60)
XTV3+8F
(58)
XTV3+8F
XTV3+6F
(65)
ⓔ Mechanism
Connection C.B.
XWGV3D54G
XWGV3D54G
(71)
(72)
XWGV5D9G
(57)
(70)
(63)
(57)
XWGV3D6G
(62)
(57)
(73)
(57)

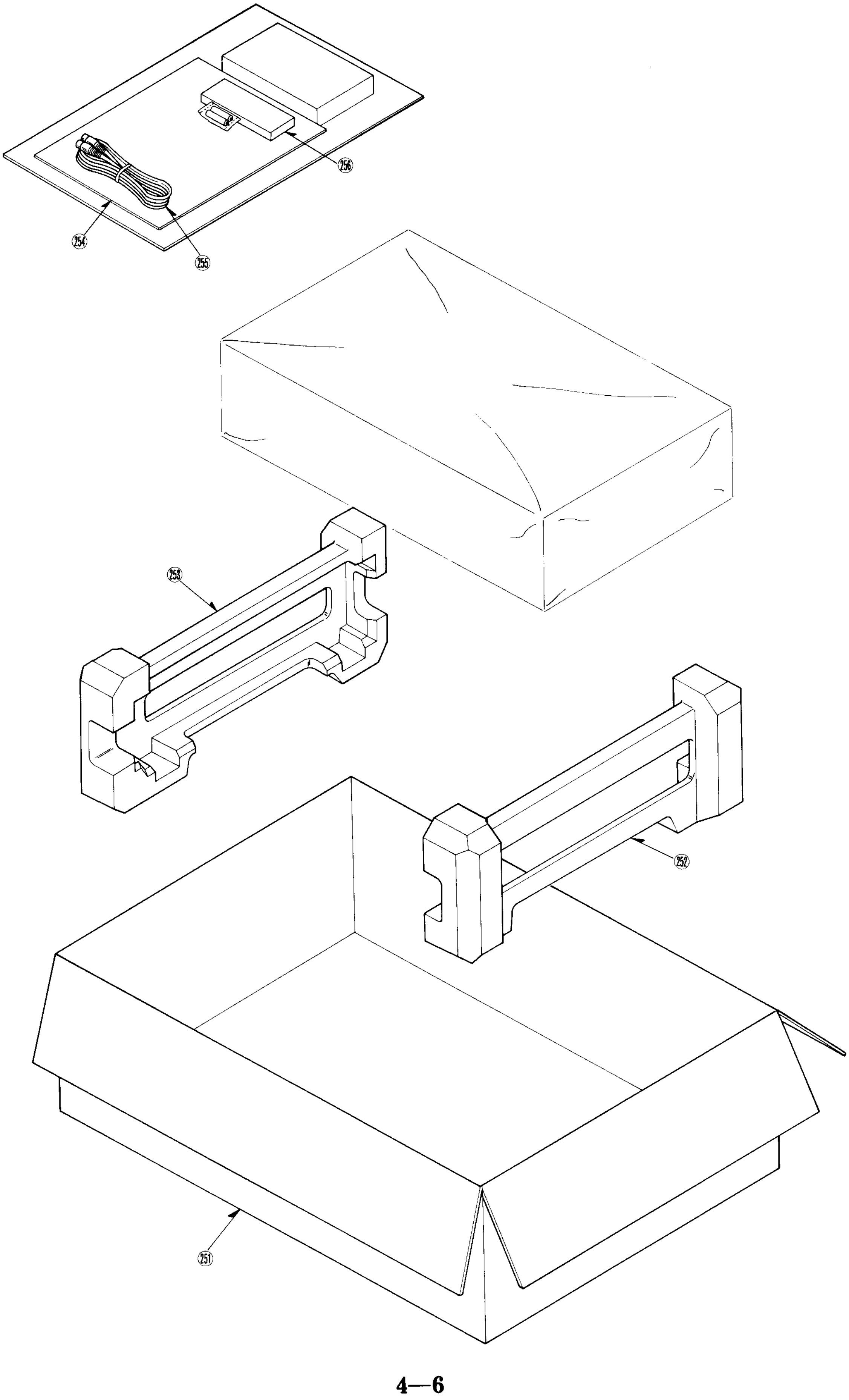
❸ CHASSIS PARTS SECTION


XTV3+8F
(119)
(120)
XTV3+8F
(121)
(117)
(118)
(94)
(126)
XTV3+8F
XTV3+8F
(112)
(89)
XWGV
3D6G
(90)
(93)
(107)
(95)
XWGV3D6G
(122)
XUEV4VW
XWGV3D6G
XUEV3VW
(98)
(87)
XTV3
+8FFZ
XTV3
+8FFZ
XUEV4VW
(103)
(96)
XWGV
3D6G
XUEV3VW
(91)
(104)
(88)
(111)
(87)
(97)
(109)
(116)
(57)
(99)
(127)
(123)
XUEV
3VW
(128)
(101)
(100)
XUEV4VW
(57)
(57)
XTV3+8F
(92)
(124)
(110)
(125)
(57)
XYE3+BF10FNK
XTV3+8F
(102)
XTV3+8F
(108)
XTV3+8F
(57)
(105)
(105)
XUEV4VW
(106)
(105)
(105)
(113)
(115)
XWGV4D11G
XUEV4VW
XUEV4VW
XWGV4D11G

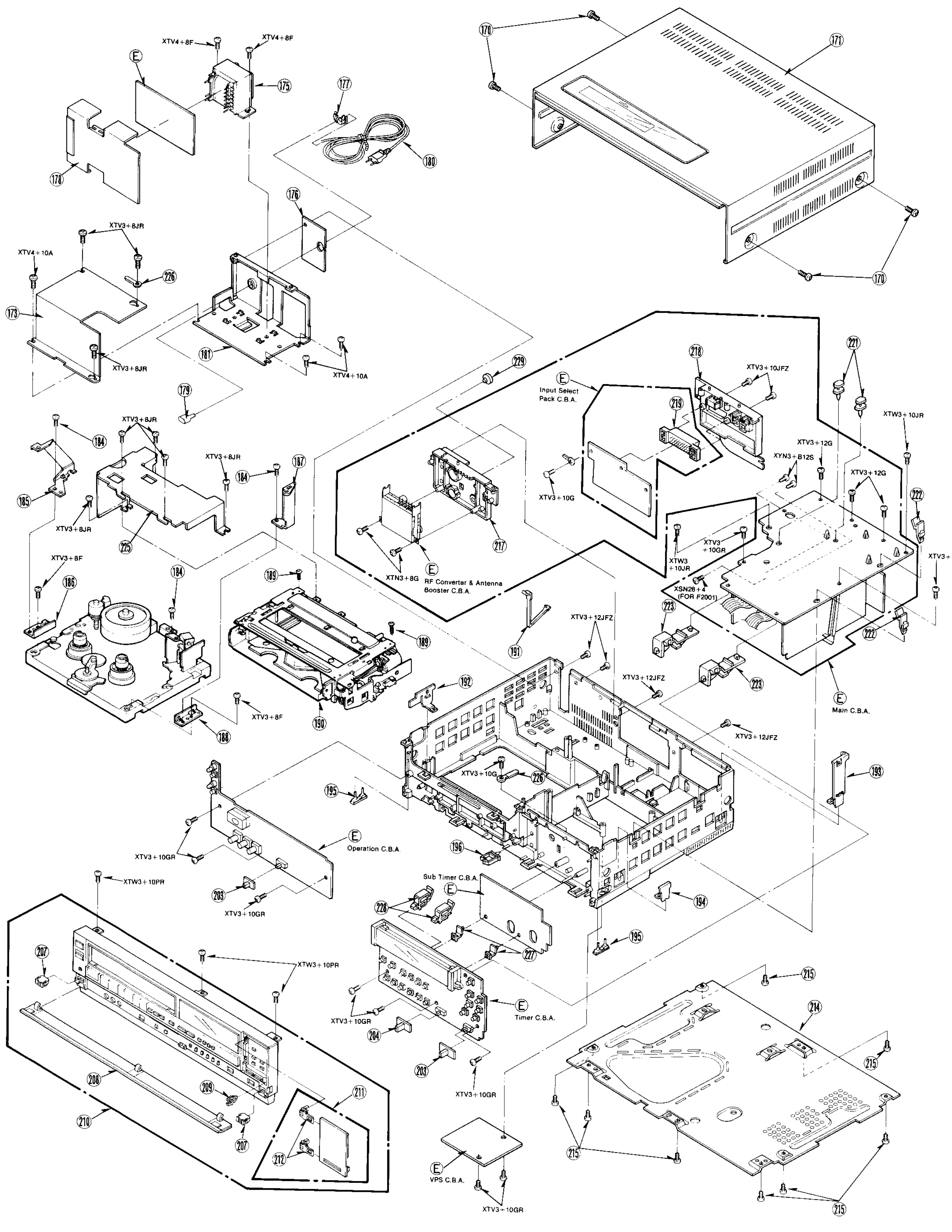
❹ CASSETTE UP MECHANISM SECTION


XTB26+8G
XTB26+8G
158
161
XTB26+8G
E
Supply Photo Tr C.B.
147
XTB26+8G
169
165
157
131
XYC26+BG10
167
162
164
129
139
130
132
136
133
137
146
XTN26+6GFZ
164
138
168
XTN26+6GFZ
134
150
159
155
135
148
142
190
157
147
151
152
141
E
Front Loading C.B.
163
57
XYC26+BG10
XYC26+BG10
XYN2+F10
156
143
140
160

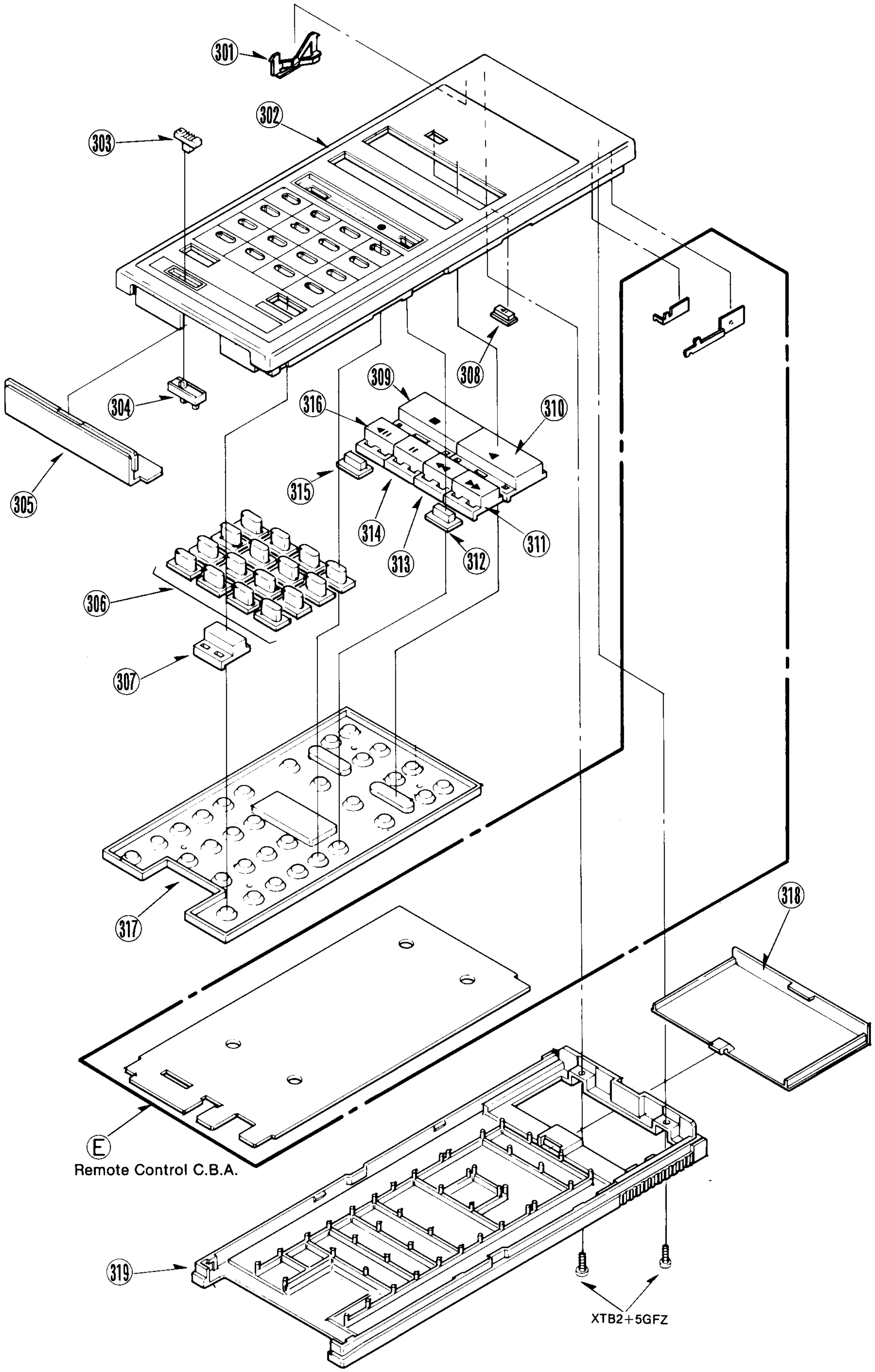
❻ PACKING PARTS SECTION


(256)
(254)
(255)
(253)
(252)
(251)

❺ CASING PARTS SECTION


170
171
XTV4+8F
XTV4+8F
E
175
177
180
178
176
XTV3+8JR
XTV4+10A
226
173
181
XTV3+8JR
XTV4+10A
229
179
218
XTV3+10JFZ
221
E
Input Select Pack C.B.A.
219
XTW3+10JR
184
XTV3+8JR
185
XTV3+8JR
225
XTV3+8JR
184
187
XTV3+10G
XTV3+12G
XYN3+B12S
XTV3+12G
222
217
XTN3+8G
E
RF Converter & Antenna Booster C.B.A.
XTV3+10GR
XTW3+10JR
XSN26+4 (FOR F2001)
XTV3+10GR
XTV3+8F
186
184
189
189
223
191
XTV3+12JFZ
222
190
188
XTV3+8F
192
XTV3+12JFZ
223
E
Main C.B.A.
XTV3+12JFZ
XTV3+10G
226
193
195
E
Operation C.B.A
XTV3+10GR
196
203
XTV3+10GR
XTW3+10PR
Sub Timer C.B.A.
E
194
228
227
195
207
XTW3+10PR
215
214
E
Timer C.B.A.
XTV3+10GR
204
203
215
XTV3+10GR
208
209
211
207
210
212
215
E
VPS C.B.A.
XTV3+10GR
215

❼ REMOTE CONTROL UNIT


301
302
303
304
305
306
307
308
309
310
311
312
313
314
315
316
317
318
319
E
Remote Control C.B.A.
XTB2+5GFZ

Memo

ORDER NO. VRD8607124A
(Date of issue : JUL, 1986)

PARTS LIST

MODEL NO : NV-G14EG

1. NV-G14EG Mechanical Replacement Parts List

* This parts list is detachable from the manual.

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
1(1)		VEG0352	DD CYLINDER UNIT	1	<!>
2(1)		VEH0287	UPPER CYLINDER UNIT	1	
3(1)		VJR0082	RT TERMINAL	1	
4(1)		VMC0049	CYLINDER HEATER PRESSURE	1	
			SPRING		
5(1)		VBS0030	FE HEAD	1	
6(1)		VML1761	FE LEVER	1	
7(1)		VMB1459	FE LEVER SPRING	1	
8(1)		VMD0797	POST STOPPER	2	
9(1)		VXP0302A	ROLLER POST UNIT	2	
10(1)		VXA2438	INCLIND BASE (S) UNIT	1	
11(1)		VXA2439	INCLIND BASE (T) UNIT	1	
12(1)		VHD0133	SCREW	2	
13(1)		VXA2446	LOADING BASE (1) UNIT	1	
14(1)		VHD0045	NYLON NUT	1	
15(1)		VDP0908	LIMITER ROLLER	1	
16(1)		VMX0541	COLLAR	1	
17(1)		VMX0456	LOWER LIMITER	1	
18(1)		VMX0663	LIMITER STAND	1	
19(1)		VMB0754	P1 SPRING	1	
20(1)		VHD0147	SCREW	4	
21(1)		VMA6764	POSITION PLATE	1	
22(1)		VMA6759	SHAFT HOLDER STOPPER (A)	1	
23(1)		VXL0753	LOADING ARM (L) UNIT	1	
24(1)		VXL1152	LOADING ARM (R) UNIT	1	
25(1)		VMB0669	LOADING SPRING	2	
26(1)		VXP0520	LOADING GEAR UNIT	2	
27(1)		VXA1966	INCLIND ADJUSTMENT PLATE	1	
28(1)		VHD0054	ADJUSTMENT SCREW	1	
29(1)		VMB1251	ADJUSTMENT SPRING	1	
30(1)		VBR0091	A/C HEAD	1	
31(1)		VHD0089B	AZIMUTH ADJUSTMENT SCREW	1	
32(1)		VHN0038	M5 NYLON NUT	1	
33(1)		VXA2160	HEAD BASE UNIT	1	
34(1)		VMB1189	A/C HEIGHT SPRING	1	
35(1)		VHN0023	M3 NYLON NUT	1	
36(1)		VMX0647	POST SLEEVE	1	
37(1)		VMB1235	P4 POST SPRING	1	
38(1)		VMA6507	CHASSIS BRACKET	1	
39(1)		VMC0117	EARTH SPRING	1	
40(1)		VMA6819	HA ANGLE (R)	1	
41(1)		VHN0050	X ADJUSTMENT NUT	1	
42(1)		VMD0646	WIRE HOLDER	1	
43(1)		GL450	PHOTO DIODE	1	OR LN59
44(1)		VMD0644	LED HOLDER	1	
45(1)		VMX0750	SPACER	1	
46(1)		VMA6717	HA ANGLE (L)	1	OR VMA6508
47(1)		VHD0268	SCREW	2	
48(2)		VXR0136	TAKE-UP REEL TABLE UNIT	1	
49(2)		VML1610	SOFT BRAKE RELEASE LEVER	1	
50(2)		VMB1290	SOFT BRAKE SPRING (A)	1	
51(2)		VXZ0189	T SIDE MAIN BRAKE UNIT	1	
52(2)		VML1754	P5 PULL OUT LEVER	1	
53(2)		VXL1371	PRESSURE ROLLER LEVER	1	
			UNIT		
54(2)		VMB1001	PIN PRESSURE SPRING	1	
55(2)		VXL1244	P5 ARM UNIT	1	
56(2)		VMB1307	P5 SPRING	1	
57(2,3,4)		VMX0653	CUT WASHER	13	
58(2)		VMB1198	S SOFT BRAKE SPRING	1	
59(2)		VML1757	S SOFT BRAKE ARM	1	
60(2)		VXZ0185	CAPSTAN BRAKE (A) UNIT	1	
61(2)		VMB1292	CAPSTAN BRAKE ARM	1	
			SPRING (1)		
62(2)		VDG0189	INTERMEDIATE GEAR (A)	1	
63(2)		VXP0600	CENTRE CLUTCH UNIT	1	
64(2)		VXP0521	IDLER ARM UNIT	1	
65(2)		VXA2153	FF LEVER BASE UNIT	1	
66(2)		VES0262	SAFETY SWITCH UNIT	1	
67(2)		VEK2604	DEW SENSOR UNIT	1	
69(2)		VXA2442	DEW ANGLE (1) UNIT	1	
70(2)		VDG0188	INTERMEDIATE GEAR (B)	1	
71(2)		VXP0599	CLUTCH GEAR UNIT	1	
72(2)		VMB1288	INTERMEDIATE GEAR LIFT	1	
			SPRING		
73(2)		VDP0985	CLUTCH PULLEY	1	
74(2)		VXL1230	IDLER STOPPER UNIT	1	
75(2)		VMB1293	IDLER STOPPER SPRING	1	
76(2)		VXL1157	TENSION ARM (1) UNIT	1	
77(2)		VMB1458	TENSION SPRING	1	
78(2)		VXZ0165	TENSION BAND UNIT	1	
79(2)		VXR0118	SUPPLY REEL TABLE UNIT	1	
80(2)		VXZ0187	S SIDE MAIN BRAKE UNIT	1	
81(2)		VMB1289	MAIN BRAKE SPRING	1	
82(2)		VMB1291	SOFT BRAKE SPRING (B)	1	
83(2)		VXZ0191	T SOFT BRAKE (1) UNIT	1	
84(2)		VMX0743	STOPPER RING	1	
85(2)		VXA2464	INTERMEDIATE ANGLE (1)	1	
			UNIT		
86(2)		VHN0023	M3 NYLON NUT	1	
87(2,3)		VHD0149	SCREW	4	
88(3)		VDG0200	CAM GEAR	1	
89(3)		VDG0278	DRIVE GEAR (2)	1	
90(3)		VDG0275	INTERMEDIATE PULLEY GEAR	1	
91(3)		VDV0158	LOADING BELT	1	
92(3)		VSS0135	MODE SELECT SWITCH	1	
93(3)		VML1618	SUB CLUTCH RELEASE ARM	1	
94(3)		VXP0695	CAPSTAN ROTOR UNIT	1	
95(3)		VEK2634	CAPSTAN STATOR UNIT	1	<!>
96(3)		VXP0597	CAPSTAN PULLEY UNIT	1	
97(3)		VDV0149	CAPSTAN BELT	1	
98(3)		VMB1296	SUB LEVER SPRING	1	
99(3)		VXL1237	SUB CLUTCH ARM (1) UNIT	1	
100(3)		VMA6504	THRUST SUPPORT PLATE	1	
101(3)		VXP0601	SUB CLUTCH UNIT	1	
102(3)		VMX0742	THRUST SCREW	1	
103(3)		VEH0275	FG HEAD UNIT	1	
104(3)		VDG0145	INTERMEDIATE GEAR	1	
105(3)		VMX0122	SLIDE WASHER	6	
106(3)		VXL1373	MAIN LEVER UNIT	1	
107(3)		VXS0059	EARTH PLATE UNIT	1	
108(3)		VXL1377	SECTOR GEAR UNIT	1	
109(3)		VMX0967	CUT WASHER	1	
110(3)		VMB1295	SELECT ARM SPRING	1	
111(3)		VXA2469	SWITCH BASE UNIT	1	
112(3)		VHD0267	SCREW	2	
113(3)		VXL1376	KICK ARM UNIT	1	
115(3)		VXL1375	SUB LEVER (1) UNIT	1	
116(3)		VMB1294	SUB CLUTCH ARM SPRING	1	
117(3)		VEM0242	LOADING MOTOR	1	<!>
118(3)		VMA6765	LOADING MOTOR BRACKET	1	
119(3)		VMX0251	OIL SEAL	1	
120(3)		VMD0104	OIL POOL	1	
121(3)		VXD0092	HOUSING UNIT	1	
122(3)		VDG0146	INTERMEDIATE GEAR	1	
123(3)		VDG0178	KICK GEAR	1	
124(3)		VXA2444	SUB CLUTCH BASE (1) UNIT	1	
125(3)		VML1763	SELECT ARM (A)	1	
126(3)		VMX0265	THRUST WASHER	1	
127(3)		VML1616	SELECT ARM (B)	1	
128(3)		VML1624	SELECT PRESSURE LEVER	1	
129(3)		VDG0274	SHAFT GEAR (L)	1	
130(3)		VXA2432	HOLDER GUIDE (L)(1) UNIT	1	
131(3)		VMD0801	SIDE PLATE (L)	1	
132(4)		VMB1456	SAFETY LEVER SPRING	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
133(4)		VXA2452	HOLDER GUIDE (R)(1) UNIT	1	
134(4)		VMA6767	CASSETTE GUIDE	1	
135(4)		VSC1577	SHIELD BRACKET (R)	1	
136(4)		VMM0152	SAFETY LEVER	1	
137(4)		VML1585	RELEASE LEVER	1	
138(4)		VMB1259	RELEASE LEVER SPRING	1	
139(4)		VXL1246	PRESSURE LEVER (L) UNIT	1	
140(4)		VXA2169	SLIDER (R)(1) UNIT	1	
141(4)		VMA6760	SWITCH BRACKET	1	
142(4)		VXA2424	SIDE PLATE (R)(1) UNIT	1	
143(4)		VXP0692	MAIN SHAFT UNIT	1	
146(4)		VXL1247	PRESSURE LEVER (R) UNIT	1	
147(4)		VMD0645	PHOTO HOLDER	2	
148(4)		VXP0693	WORM SHAFT UNIT	1	
150(4)		VKF0487	BLINDER PANEL	1	
151(4)		VML1756	WIPER ARM (R)	1	
152(4)		VMB1300	WIPER SPRING (R)	1	
155(4)		VEM0243	FRONT LOADING MOTOR	1	<!>
156(4)		VXP0691	WORM WHEEL UNIT	1	
157(4)		PN150NV	PHOTO Tr.	2	
158(4)		VML1625	FRONT OPENER LEVER	1	
159(4)		VMB1258	BLINDER SPRING	1	
160(4)		VSH0028	SKELTON SWITCH	2	
161(4)		VSC1578	SHIELD BRACKET (L)	1	
162(4)		VML1620	WIPER ARM (L)	1	
163(4)		VXL1238	CASSETTE OPENER UNIT	1	
164(4)		VMB1257	PRESSURE LEVER SPRING	2	
165(4)		VMA6766	TOP PLATE	1	
167(4)		VXA2181	HOLDER ANGLE UNIT	1	
168(4)		VMA6761	CASSETTE HOLDER	1	
169(4)		VMB1301	WIPER SPRING (L)	1	
170(5)		VHD0165	SCREW	4	
171(5)		VYP1708	TOP PANEL UNIT	1	
173(5)		VSC1774	POWER SHIELD CASE	1	
175(5)		VTP0187	POWER TRANSFORMER	1	<!>
176(5)		VGH0923	POWER NAME PLATE	1	
177(5)		VJF0107	AC CORD BUSHING	1	<!>
178(5)		VXA2669	POWER BARRIER	1	<!>
179(5)		VMX0237	AC CORD COVER	1	<!>
180(5)		VJA0326	AC CORD	1	<!>
181(5)		VMP0986	POWER TRANS. ANGLE	1	
184(5)		VHD0168	SCREW	3	
185(5)		VSC1175	SHIELD PLATE(L)	1	
186(5)		VMA6465	MOUNT PLATE(L)	1	
187(5)		VSC1174	SHIELD PLATE(R)	1	
188(5)		VMA6466	MOUNT PLATE(R)	1	
189(5)		VHD0268	SCREW	2	
190(4,5)		VXA2562	CASSETTE UP UNIT	1	
191(5)		VJF0139	AC CORD BAND	1	
192(5)		VMP0464	TOP HOLD ANGLE(L)	1	
193(5)		VMP0442	TOP HOLD ANGLE	1	
194(5)		VMP0934	TOP HOLD ANGLE(R)	1	
195(5)		VKA0026	RUBBER FOOT	2	
196(5)		VJF0122	WIRE SUDDLE	1	
203(5)		VGU2707	EDIT KNOB	2	
204(5)		VGU2725	TIMER REC KNOB	1	
207(5)		VGQ0963	FRONT DOOR MAGNET	2	
208(5)		VYF0880	FRONT DOOR UNIT	1	
209(5)		VGQ0550	PRESET DOOR LATCH	1	
210(5)		VYP1707	FRONT PANEL UNIT	1	
211(5)		VYF0906	PRESET DOOR UNIT	1	
212(5)		VKC0278	HINGE	2	
214(5)		VYP1694	BOTTOM PLATE	1	
215(5)		VHD0059	SCREW	8	
217(5)		VJH0400	RF & ANTENNA BOARD	1	
218(5)		VEJ0504	REAR JACK UNIT	1	
219(5)		VJS1469	21 PIN JACK	1	
221(5)		VMX0985	MAIN C.B SPACER	2	
222(5)		VKC0247	HINGE(BLACK)	2	
223(5)		VKC0280	HINGE (WHITE)	2	
225(5)		VSC1541	SHIELD CASE	1	
226(5)		VJR3	CLAMPER	2	
227(5)		VKC0283	HINGE	2	
228(5)		VJF0236	C.B SUPPORT	2	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
229(5)		VMG0272	RF CONVERTER BUSHING	1	
			CONNECTIVE SHAFT		
251(6)		VPG2840	PACKING CASE	1	
252(6)		VPN1468	CUSHION(R)	1	
253(6)		VPN1469	CUSHION(L)	1	
254(6)		VQT1985	OPERATING INSTRUCTIONS	1	<!>
255(6)		VJA0376	DIN RF CABLE	1	
256(6)		VEQ0484	REMOTE CONTROL UNIT	1	
301(7)		VJR0101	ELECTRODE (COMMON)	1	
302(7)		VYK1395	TOP CASE UNIT	1	
303(7)		VGU1213	REMOTE ON/OFF BUTTON	1	
304(7)		VGQ0601	REMOTE ON/OFF BUTTON HOLDER	1	
305(7)		VKW0297	SMOKE BOARD	1	
306(7)		VGU1618	CH BUTTON	16	
307(7)		VGU1210	VTR BUTTON	1	
308(7)		VGU1612	SLOW BUTTON	1	
309(7)		VGU1205	STOP BUTTON	1	
310(7)		VGU1204	PLAY BUTTON	1	
311(7)		VGU1208	REW BUTTON	1	
312(7)		VGU1212	REC BUTTON	1	
313(7)		VGU1209	FF BUTTON	1	
314(7)		VGU1206	STILL BUTTON	1	
315(7)		VGU1619	REC SUB BUTTON	1	
316(7)		VGU1207	STILL ADVANCE BUTTON	1	
317(7)		VSP0150	RUBBER BUTTON	1	
318(7)		VKF0340	BATTERY COVER	1	
319(7)		VYK1396	BOTTOM CASE UNIT	1	
			JIG		
		VFJ8125H3F	VHS-ALIGNMENT TAPE	1	
		VFK0144	RETAINING RING REMOVER(3mm)	1	
		VFK0191	POST ADJUSTMENT PLATE	1	
		VFK0190	REEL TABLE HEIGHT JIG	1	
		VFK0189	H-POSITION ADJ-FIXTURE	1	
		VFK0137	POST ADJUSTMENT SCREWDRIVER	1	
		VFK0136	FINE ADJUSTMENT SCREWDRIVER	1	
		VFK0133	DIAL TORQUE GAUGE	1	
		VFK0134	ADAPTOR FOR VFK0133	1	
		VFK66	FAN TYPE TENSION GAUGE	1	
		VFK27	HEAD CLEANING STICK	1	
		MOR265	MORLYTONE GREASE	1	
		VFK0283	SERVICE ALIGNMENT TOOL KIT	1	

2. NV-G14EG Electrical Replacement Parts List

Note:1.* Be sure to make your orders of replacement parts according to this list.
2.IMPORTANT SAFETY NOTICE
Components identified with the mark <!> have the special characteristics for safety. When replacing any of these components,use only the same type.
3.Unless otherwise specified,
All resistors are in OHMS ,K=1,000 OHMS. All capacitors are in MICRO-FARADS(uf),P=uuF.
4.The P.C.Board units marked width'■'show below the main assembled parts.

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEP03336B	MAIN C.B.A.	1	INCLUDING THE SERVO
			(POWER SUPPLY,SERVO,AUDIO,		PACK C.B.A.
			SYSTEM CONTROL,LUMINANCE &		(VEP02225E),
			CHROMINANCE,TUNER,		LUMINANCE &
			TV DEMODULATOR)		CHROMINANCE PACK
					C.B.A.(VEP03316G),
					AUDIO PACK C.B.A.
					(VEP04110),
					TV DEMODULATOR PACK
					C.B.A.(VEP07312C),
					REC AMP PACK C.B.A.
					(VEP03318A)
					<!>
		VEP02225E	SERVO PACK C.B.A.	1	
		VEP03316G	LUMINANCE & CHROMINANCE	1	INCLUDING THE
			PACK C.B.A.		SECAM PACK C.B.A.
					(VEP03294A)
		VEP03294A	SECAM PACK C.B.A.	1	
		VEP04110	AUDIO PACK C.B.A.	1	
		VEP07312C	TV DEMODULATOR C.B.A.	1	
		VEP03318A	REC AMP PACK C.B.A.	1	
		VEP05082	HEAD AMP PACK C.B.A.	1	
		VEP06364B	OPERATION C.B.A.	1	INCLUDING THE
					IR RECEIVER C.B
					(VJB00H04)
		VEP07337A	TIMER C.B.A.	1	
		VEP07336C	TIMER SUB C.B.A.	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
		VEP06365A	VPS C.B.A.	1	
		VEP03387A	INPUT SELECT C.B.A.	1	
		ENC87786	RF CONVERTER & ANTENNA	1	<!>
			BOOSTER		
		VJB00H04	IR RECEIVER C.B.	1	
		VJB00G13	SUPPLY PHOTO Tr. C.B.	1	
		VJB00G23	LED C.B.	1	
		VJB00G10	MECHANISM CONNECTION C.B.	1	
		VJB00G15	CYLINDER HEATER C.B.	1	
		VJB00G09	FRONT LOADING C.B.	1	
		VJB00G12	REEL SENSOR C.B.	1	
		VEP01213B	POWER TRANSFORMER C.B.A.	1	<!>
		VEP22044A	IR REMOTE CONTROLLER C.B.A.	1	
		TNV57451F2	TUNER	1	<!>
T1101		VTP0187	POWER TRANSFORMER	1	<!>
F1101		XBA2C04TB0A	FUSE 250V 400mA	1	<!>
F1102		XBA2C20TB0A	FUSE 250V 2A	1	
F1103		XBA2C20TB0A	FUSE 250V 2A	1	
		VJF0215	BINDER	1	
		VWJ20A	FLEXIBLE WIRE (20PIN)	1	(P7508-P7510)
		VWJ20A	FLEXIBLE WIRE (20PIN)	1	(P7509-P7511)
		VWJ07BW210MM	FLEXIBLE WIRE (7PIN)	1	(P6001-P1510)
		VWJ24BW380MM	FLEXIBLE WIRE (24PIN)	1	(P6002-P1517)
	■	VEP03336B	MAIN C.B.A.		<!>
			(POWER SUPPLY,SERVO,AUDIO,		
			SYSTEM CONTROL,LUMINANCE &		
			CHROMINANCE, TUNER,		
			TV DEMODULATOR)		

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			INTEGRATED CIRCUITS		
IC1001		STK5331	IC	1	
IC2001		AN3821K	IC	1	
IC6001		MN15342VEI	IC	1	
IC6002		AN6914	IC	1	OR µPC393C
IC6003		BA6248	IC	1	OR M54649L
IC6004		MN1280R	IC	1	
IC7551		AN5033	IC	1	
			TRANSISTORS		
Q1001		2SC1384	TRANSISTOR	1	(R)
Q1002		2SD1275	TRANSISTOR	1	
Q1003		2SC1384	TRANSISTOR	1	(R)
Q3001		2SB641	TRANSISTOR	1	(Q,R,S) OR 2SA937M
Q4002		2SD636	TRANSISTOR	1	
Q6002		2SD636	TRANSISTOR	1	(Q,R,S) OR 2SC2021M
Q6004		2SD638	TRANSISTOR	1	(S) OR 2SD1458
Q6005		2SB790	TRANSISTOR	1	(Q,R,S)
Q6006		2SB790	TRANSISTOR	1	(Q,R,S)
Q6007		2SD636	TRANSISTOR	1	(Q,R,S) OR 2SC2021M
Q7551		2SB644	TRANSISTOR	1	(R,S,T)
Q7552		2SB644	TRANSISTOR	1	(R,S,T)
Q8001		2SD636	TRANSISTOR	1	(Q,R,S)
			COMBINATION PARTS		
			(TRANSISTORS & RESISTOR)		
QR1001		UN1211	COMBINATION PARTS	1	OR DTC114EA
QR2001		UN1213	COMBINATION PARTS	1	OR DTC144EA
QR2002		UN1113	COMBINATION PARTS	1	OR DTA144EA
QR6001		UN1211	COMBINATION PARTS	1	OR DTC114EA
QR6002		UN1212	COMBINATION PARTS	1	OR DTC124EA
QR6003		UN1112	COMBINATION PARTS	1	OR DTA124EA
QR6005		UN1211	COMBINATION PARTS	1	OR DTC114EA
QR7551		UN1211	COMBINATION PARTS	1	OR DTC114EA
QR8001		UN1212	COMBINATION PARTS	1	OR DTC124EA
			DIODES		
D1001		ERA15-01	DIODE	1	
D1002		ERA15-01	DIODE	1	
D1003		ERA15-01	DIODE	1	
D1004		ERA15-01	DIODE	1	
D1005		ERA15-01	DIODE	1	
D1006		MA165	DIODE	1	OR 1SS133,1SS119
D1007		MA165	DIODE	1	
D1008		MA4130H	DIODE	1	
D1009		ERA15-01	DIODE	1	
D1010		MA165	DIODE	1	
D2001		MA165	DIODE	1	OR 1SS133,1SS119
D3004		MA165	DIODE	1	OR 1SS133,1SS119
D6001		MA165	DIODE	1	OR 1SS133,1SS119
D6005		MA165	DIODE	1	OR 1SS133,1SS119
D6007		ERA15-01	DIODE	1	
D6008		MA165	DIODE	1	OR 1SS133,1SS119
D6009		MA165	DIODE	1	OR 1SS133,1SS119
D6011		MA165	DIODE	1	OR 1SS133,1SS119
D7551		MA165	DIODE	1	OR 1SS133,1SS119
D7554		LN28WPVT	LED	1	
D7555		MA27WB	DIODE	1	
D7556		MA165	DIODE	1	OR 1SS133,1SS119
D7557		MA165	DIODE	1	OR 1SS133,1SS119
			RESISTORS		
R701		ERDS2TJ123	CARBON 1/4W 12K	1	
R702		ERDS2TJ392	CARBON 1/4W 3.9K	1	
R703		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R704		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R707		ERDS2TJ103	CARBON 1/4W 10K	1	
R708		ERDS2TJ221	CARBON 1/4W 220	1	
R1001		ERG12ANJ182	METAL OXIDE 1/2W 1800	1	
R1002		ERDS2TJ682	CARBON 1/4W 6.8K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R1003		ERDS2TJ103	CARBON 1/4W 10K	1	
R1004		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R1005		ERDS2TJ472	CARBON 1/4W 4.7K	1	
R1006		ERDS2TJ472	CARBON 1/4W 4.7K	1	
R1007		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R1008		ERDS2TJ472	CARBON 1/4W 4.7K	1	
R2004		EROS2CKG1203	METAL OXIDE 1/4W 120K	1	
R2005		ERDS2TJ102	CARBON 1/4W 1K	1	
R2006		ERX12SJR82	METAL OXIDE 1/2W 0.82	1	
R2007		ERDS2TJ224	CARBON 1/4W 220K	1	
R2008		ERDS2TJ224	CARBON 1/4W 220K	1	
R2009		ERDS2TJ224	CARBON 1/4W 220K	1	
R2010		EROS2CKG2201	METAL OXIDE 1/4W 2.2K	1	
R2011		EROS2CKG1302	METAL OXIDE 1/4W 13K	1	
R2012		ERQ12HJ6R8P	FUSE 1/2W 6.8	1	<!>
R2013		ERDS2TJ181	CARBON 1/4W 180	1	
R2014		ERDS2TJ473	CARBON 1/4W 47K	1	
R2017		ERDS2TJ222	CARBON 1/4W 2.2K	1	
R2018		ERDS2TJ103	CARBON 1/4W 10K	1	
R2021		ERDS2TJ561	CARBON 1/4W 560	1	
R2022		ERDS2TJ101	CARBON 1/4W 100	1	
R3004		ERDS2TJ750	CARBON 1/4W 75	1	
R3005		ERDS2TJ750	CARBON 1/4W 75	1	
R3006		ERDS2TJ561	CARBON 1/4W 560	1	
R3023		ERDS2TJ392	CARBON 1/4W 3.9K	1	
R3024		ERDS2TJ334	CARBON 1/4W 330K	1	
R3031		ERDS2TJ750	CARBON 1/4W 75	1	
R4001		ERDS2TJ100	CARBON 1/4W 10	1	
R4002		ERDS2TJ333	CARBON 1/4W 33K	1	
R4005		ERDS2TJ183	CARBON 1/4W 18K	1	
R4009		ERDS2TJ473	CARBON 1/4W 47K	1	
R4010		ERDS2TJ473	CARBON 1/4W 47K	1	
R4011		ERDS2TJ472	CARBON 1/4W 4.7K	1	
R4012		ERDS2TJ473	CARBON 1/4W 47K	1	
R4013		ERDS2TJ101	CARBON 1/4W 100	1	
R4015		ERDS2TJ222	CARBON 1/4W 2.2K	1	
R6001		ERDS2TJ683	CARBON 1/4W 68K	1	
R6002		ERDS2TJ103	CARBON 1/4W 10K	1	
R6003		ERDS2TJ184	CARBON 1/4W 180K	1	
R6004		ERDS2TJ223	CARBON 1/4W 22K	1	
R6005		ERDS2TJ223	CARBON 1/4W 22K	1	
R6006		ERDS2TJ223	CARBON 1/4W 22K	1	
R6007		ERDS2TJ824	CARBON 1/4W 820K	1	
R6008		ERDS2TJ105	CARBON 1/4W 1000K	1	
R6009		ERDS2TJ122	CARBON 1/4W 1.2K	1	
R6010		ERDS2TJ181	CARBON 1/4W 180	1	
R6011		ERDS2TJ152	CARBON 1/4W 1.5K	1	
R6012		ERDS2TJ221	CARBON 1/4W 220	1	
R6013		ERDS2TJ223	CARBON 1/4W 22K	1	
R6014		ERDS2TJ563	CARBON 1/4W 56K	1	
R6015		ERDS2TJ221	CARBON 1/4W 220	1	
R6017		ERDS2TJ153	CARBON 1/4W 15K	1	
R6018		ERDS2TJ153	CARBON 1/4W 15K	1	
R6019		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R6020		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R6021		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R6022		ERDS2TJ103	CARBON 1/4W 10K	1	
R6023		ERDS2TJ332	CARBON 1/4W 3.3K	1	
R6024		ERDS2TJ391	CARBON 1/4W 390	1	
R6025		ERDS2TJ103	CARBON 1/4W 10K	1	
R6027		ERDS2TJ101	CARBON 1/4W 100	1	
R6030		ERDS2TJ681	CARBON 1/4W 680	1	
R6031		ERDS2TJ332	CARBON 1/4W 3.3K	1	
R6032		ERDS2TJ681	CARBON 1/4W 680	1	
R6034		ERD2FCG180	CARBON 2W 18	1	<!>
R6038		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R6039		ERDS2TJ332	CARBON 1/4W 3.3K	1	
R6041		ERDS2TJ152	CARBON 1/4W 1.5K	1	
R6043		ERDS2TJ103	CARBON 1/4W 10K	1	
R6044		ERDS2TJ472	CARBON 1/4W 4.7K	1	
R6045		ERDS2TJ472	CARBON 1/4W 4.7K	1	
R6046		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R6049		ERDS2TJ103	CARBON 1/4W 10K	1	
R6053		ERDS1TJ470	CARBON 1/2W 47	1	
R6054		ERDS2TJ101	CARBON 1/4W 100	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R6055		ERDS2TJ561	CARBON 1/4W 560	1	
R6056		ERDS2TJ101	CARBON 1/4W 100	1	
R6057		ERDS2TJ561	CARBON 1/4W 560	1	
R6058		ERDS2TJ561	CARBON 1/4W 560	1	
R6059		ERDS2TJ222	CARBON 1/4W 2.2K	1	
R6060		ERDS2TJ222	CARBON 1/4W 2.2K	1	
R6061		ERDS2TJ222	CARBON 1/4W 2.2K	1	
R6065		ERDS2TJ103	CARBON 1/4W 10K	1	
R6066		ERDS2TJ181	CARBON 1/4W 180	1	
R7551		ERDS2TJ104	CARBON 1/4W 100K	1	
R7552		ERDS2TJ332	CARBON 1/4W 3.3K	1	
R7553		ERDS2TJ332	CARBON 1/4W 3.3K	1	
R7554		ERDS2TJ102	CARBON 1/4W 1K	1	
R7555		ERDS2TJ102	CARBON 1/4W 1K	1	
R7556		ERDS2TJ473	CARBON 1/4W 47K	1	
R7557		ERDS2TJ124	CARBON 1/4W 120K	1	
R7558		ERDS2TJ104	CARBON 1/4W 100K	1	
R7559		ERDS2TJ473	CARBON 1/4W 47K	1	
R7560		ERDS2TJ473	CARBON 1/4W 47K	1	
R7561		ERDS2TJ223	CARBON 1/4W 22K	1	
R7562		ERDS2TJ332	CARBON 1/4W 3.3K	1	
R7563		ERDS2TJ332	CARBON 1/4W 3.3K	1	
R7564		ERDS2TJ332	CARBON 1/4W 3.3K	1	
R7565		ERDS2TJ222	CARBON 1/4W 2.2K	1	
R7566		ERDS2TJ334	CARBON 1/4W 330K	1	
R7567		ERDS2TJ104	CARBON 1/4W 100K	1	
R7568		ERDS2TJ103	CARBON 1/4W 10K	1	
R7571		ERDS2TJ102	CARBON 1/4W 1K	1	
R7572		ERDS2TJ473	CARBON 1/4W 47K	1	
R7573		ERDS2TJ820	CARBON 1/4W 82	1	
R7574		ERDS2TJ333	CARBON 1/4W 33K	1	
R7575		ERDS2TJ273	CARBON 1/4W 27K	1	
R7576		ERDS2TJ390	CARBON 1/4W 39	1	
R8001		ERDS2TJ102	CARBON 1/4W 1K	1	
R8002		ERDS2TJ221	CARBON 1/4W 220	1	
R8003		ERDS2TJ822	CARBON 1/4W 8.2K	1	
R8004		ERDS2TJ821	CARBON 1/4W 820	1	
			VARIABLE RESISTORS		
VR2001		EVN61AA00B54	VARIABLE 50K	1	
VR2002		EVN61AA00B15	VARIABLE 100K	1	
VR2011		EVN61AA00B15	VARIABLE 100K	1	
VR3001		EVN61AA00B23	VARIABLE 2K	1	
VR3051		EVN61AA00B22	VARIABLE 200	1	
VR4001		EVN61AA00B13	VARIABLE 1K	1	
VR4002		EVN61AA00B25	VARIABLE 200K	1	
VR7502		EVN61AA00B14	VARIABLE 10K	1	
			CAPACITORS		
C701		ECEA1CK220	ELECTROLYTIC 16V 22U	1	
C702		ECEA1EK4R7	ELECTROLYTIC 25V 4.7U	1	
C705		ECEA1CKS220	ELECTROLYTIC 16V 22U	1	
C707		ECEA1HKS010	ELECTROLYTIC 50V 1U	1	
C708		ECEA1CKS220	ELECTROLYTIC 16V 22U	1	
C709		ECKF1H103ZF	ELECTROLYTIC 50V 0.01U	1	
C1001		ECEA1EU332	CERAMIC 25V 3300U	1	
C1002		ECEA1VU101	ELECTROLYTIC 35V 100U	1	
C1003		ECEA1CK101	ELECTROLYTIC 16V 100U	1	
C1004		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C1005		ECEA1AK101	ELECTROLYTIC 10V 100U	1	
C1006		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C2001		ECEA1VU4R7	ELECTROLYTIC 35V 4.7U	1	
C2002		ECEA1VU4R7	ELECTROLYTIC 35V 4.7U	1	
C2003		ECEA1VU4R7	ELECTROLYTIC 35V 4.7U	1	
C2004		ECQB1H822KH	MYLAR 50V 8200P	1	
C2005		ECQB1H822KH	MYLAR 50V 8200P	1	
C2006		ECQB1H822KH	MYLAR 50V 8200P	1	
C2007		ECQV1H104JZ	MYLAR 50V 0.1U	1	
C2008		ECEA1HK010	ELECTROLYTIC 50V 1U	1	
C2009		ECEA1HK0R1	ELECTROLYTIC 50V 0.1U	1	
C2010		ECEA0JK470	ELECTROLYTIC 6.3V 47U	1	
C2011		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C3002		ECEA0JU471	ELECTROLYTIC 6.3V 470U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C3003		ECEA1CU470	ELECTROLYTIC 16V 47U	1	
C3005		VCYD1C104MR1	SEMICONDUCTOR 16V 0.1U	1	
C3017		ECCF1H100DC	CERAMIC 50V 10P	1	
C3019		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C3030		ECQV1H104JZ	MYLAR 50V 0.1U	1	
C4001		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C4002		ECKF1H472ZF	CERAMIC 50V 4700P	1	
C4003		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C4006		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C4101		ECKF1H471KB	CERAMIC 50V 470P	1	
C6002		ECEA0JK101	ELECTROLYTIC 6.3V 100U	1	
C6003		ECKF1H681KB	CERAMIC 50V 680P	1	
C6004		ECEA0JK470	ELECTROLYTIC 6.3V 47U	1	
C6005		ECEA0JK470	ELECTROLYTIC 6.3V 47U	1	
C6006		VCYD1C104MR1	SEMICONDUCTOR 16V 0.1U	1	
C6007		ECCF1H330JC	CERAMIC 50V 33P	1	
C6008		ECCF1H330JC	CERAMIC 50V 33P	1	
C6009		ECEA1HKN010	ELECTROLYTIC 50V 1U	1	
C6010		ECEA1HKN010	ELECTROLYTIC 50V 1U	1	
C6011		ECEA1HK2R2	ELECTROLYTIC 50V 2.2U	1	
C6013		ECKF1H221KB	CERAMIC 50V 220P	1	
C6014		ECEA1HKN2R2	ELECTROLYTIC 50V 2.2U	1	
C6015		ECEA50Z2R2	ELECTROLYTIC 50V 2.2U	1	
C6016		ECEA50Z3R3	ELECTROLYTIC 50V 3.3U	1	
C6018		EECF5R5U105	GOLD 5.5V 1	1	
C6019		ECEA1AU331	ELECTROLYTIC 10V 330U	1	
C6030		ECEA1CK101	ELECTROLYTIC 16V 100U	1	
C6031		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C7551		ECQV1H104JZ	MYLAR 50V 0.1U	1	
C7552		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C7553		ECEA1HK010	ELECTROLYTIC 50V 1U	1	
C7554		ECEA1HK220	ELECTROLYTIC 50V 220U	1	
C7555		ECQB1H273JH	MYLAR 50V 0.027	1	
C7556		ECQV1H823JZ	MYLAR 50V 0.082	1	
C7557		ECQV1H683JZ	MYLAR 50V 0.068	1	
C7558		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C7559		ECQV1H104JZ	MYLAR 50V 0.1U	1	
C7560		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C7561		ECQV1H104JZ	MYLAR 50V 0.1U	1	
C7562		ECEA2AU100	ELECTROLYTIC 100V 10U	1	
C7563		ECEA1HKN010	ELECTROLYTIC 50V 1U	1	
C7564		ECKF1H102KB	CERAMIC 50V 1000P	1	
C7565		ECKF1H102KB	CERAMIC 50V 1000P	1	
C7566		ECEA1HK010	ELECTROLYTIC 50V 1U	1	
C7567		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C8001		ECEA0JK470	ELECTROLYTIC 6.3V 47U	1	
C8002		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C8003		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
			COILS		
L701		VLQEL05F680K	COIL 68UH	1	
L762		VLQEL05F221K	COIL 220UH	1	
L791		VLQEL05F221K	COIL 220UH	1	
L3003		VLQEL05F101K	COIL 100UH	1	
L3007		VLQEL05F1R0K	COIL 1UH	1	
L7551		VLQEL05F102K	COIL 1mH	1	
			CRYSTAL OSCILLATOR		
X6001		VSX0082		1	
			FUSE		
F2001		VSF0043		1	<!>
			CONNECTORS		
P1001		VJP1261	10P	1	
P1002		VJP1141	2P	1	
P2001		VJP1263	12P	1	
P3002		VJP1263	12P	1	
P3003		VJP1259	8P	1	
P4001		VJP1254	3P	1	
P4002		VJP1254	3P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
P6001		VJS1465	7P	1	
P6002		VJS1444	24P	1	
P7505		VJS1235	8P	1	
			MISCELLANEOUS		
		VSC1695	HEAT SINK	1	FOR IC1001
		VSC1446	HEAT SINK	1	FOR Q1001
		VSC1446	HEAT SINK	1	FOR Q1003
		VMC0075	HEAT SINK SPRING	1	FOR IC2001
		VMC0105	SUPPORT ANGLE	1	FOR IC2001
		VSC1689	HEAT SINK	1	FOR IC2001
		VMP0933	SERVO C.B.A. SUPPORT ANGLE	1	
		VJF0331	CLAMPER	1	
		VJF0346	REC AMP PACK C.B.A. HOLDER	1	
		VGQ0107	CLAMPER	1	
		VJF0215	BINDER	3	
		VJF0330	BINDER	2	
		VJF0022	WIRE SADDLE	3	
		VSC1181	HEAT SINK	1	FOR Q1002
	■	VEP02225E	SERVO PACK C.B.A.		
			INTEGRATED CIRCUITS		
IC201		AN3795N	IC	1	
IC203		AN6387	IC	1	
IC205		BA8420	IC	1	
IC206		AN3792	IC	1	
IC207		MN6178VAL	IC	1	
			TRANSISTORS		
Q201		2SB641	TRANSISTOR	1	OR 2SA937M
Q203		2SD636	TRANSISTOR	1	OR 2SC2021M
Q204		2SD636	TRANSISTOR	1	OR 2SC2021M
Q205		2SD636	TRANSISTOR	1	OR 2SC2021M
			COMBINATION PARTS		
			(TRANSISTORS & RESISTOR)		
QR202		UN1113	COMBINATION PARTS	1	OR DTA144EA
QR205		UN1112	COMBINATION PARTS	1	OR DTA124EA
QR208		UN1113	COMBINATION PARTS	1	OR DTA144EA
			DIODES		
D204		MA165	DIODE	1	OR 1SS133,1SS119
D205		MA165	DIODE	1	OR 1SS133,1SS119
D208		MA165	DIODE	1	OR 1SS133,1SS119
D209		MA165	DIODE	1	OR 1SS133,1SS119
D210		MA165	DIODE	1	OR 1SS133,1SS119
D211		MA165	DIODE	1	OR 1SS133,1SS119
D212		MA165	DIODE	1	OR 1SS133,1SS119
D213		MA165	DIODE	1	OR 1SS133,1SS119
D214		MA165	DIODE	1	OR 1SS133,1SS119
			RESISTORS		
R202		ERDS2TJ393	CARBON 1/4W 39K	1	
R203		ERDS2TJ102	CARBON 1/4W 1K	1	
R209		ERDS2TJ563	CARBON 1/4W 56K	1	
R210		ERDS2TJ272	CARBON 1/4W 2.7K	1	
R211		ERDS2TJ272	CARBON 1/4W 2.7K	1	
R217		EROS2CKG5101	METAL OXIDE 1/4W 5.1K	1	
R218		EROS2CKG8201	METAL OXIDE 1/4W 8.2K	1	
R219		ERDS2TJ154	CARBON 1/4W 150K	1	
R220		ERDS2TJ154	CARBON 1/4W 150K	1	
R221		ERDS2TJ333	CARBON 1/4W 33K	1	
R222		ERDS2TJ124	CARBON 1/4W 120K	1	
R223		ERDS2TJ332	CARBON 1/4W 3.3K	1	
R224		ERDS2TJ104	CARBON 1/4W 100K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R225		ERDS2TJ124	CARBON 1/4W 120K	1	
R226		EROS2CKG2701	METAL OXIDE 1/4W 2.7K	1	
R227		ERX12SJR68	METAL OXIDE 1/2W 0.68	1	
R228		EROS2CKG2200	METAL OXIDE 1/4W 220	1	
R229		ERDS2TJ150	CARBON 1/4W 15	1	
R230		ERDS2TJ150	CARBON 1/4W 15	1	
R231		ERDS2TJ150	CARBON 1/4W 15	1	
R232		ERDS2TJ102	CARBON 1/4W 1K	1	
R233		ERDS2TJ105	CARBON 1/4W 1000K	1	
R234		ERDS2TJ223	CARBON 1/4W 22K	1	
R235		ERDS2TJ224	CARBON 1/4W 220K	1	
R237		ERDS2TJ105	CARBON 1/4W 1000K	1	
R239		ERDS2TJ102	CARBON 1/4W 1K	1	
R240		EROS2CKG3602	METAL OXIDE 1/4W 36K	1	
R241		ERDS2TJ124	CARBON 1/4W 120K	1	
R244		ERDS2TJ124	CARBON 1/4W 120K	1	
R245		ERDS2TJ184	CARBON 1/4W 180K	1	
R246		ERDS2TJ104	CARBON 1/4W 100K	1	
R248		ERDS2TJ473	CARBON 1/4W 47K	1	
R249		ERDS2TJ473	CARBON 1/4W 47K	1	
R250		ERDS2TJ473	CARBON 1/4W 47K	1	
R251		ERDS2TJ473	CARBON 1/4W 47K	1	
R252		ERDS2TJ153	CARBON 1/4W 15K	1	
R253		ERDS2TJ223	CARBON 1/4W 22K	1	
R254		ERDS2TJ331	CARBON 1/4W 330	1	
R255		ERDS2TJ154	CARBON 1/4W 150K	1	
R256		ERDS2TJ154	CARBON 1/4W 150K	1	
R257		ERDS2TJ274	CARBON 1/4W 270K	1	
R258		ERDS2TJ563	CARBON 1/4W 56K	1	
R259		ERDS2TJ682	CARBON 1/4W 6.8K	1	
R260		ERDS2TJ333	CARBON 1/4W 33K	1	
R261		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R264		ERDS2TJ103	CARBON 1/4W 10K	1	
R265		ERDS2TJ101	CARBON 1/4W 100	1	
			VARIABLE RESISTOR		
VR2003		EVL51MA00B25	VARIABLE 200K	1	
			CAPACITORS		
C201		ECCF1H271JC	CERAMIC 50V 270P	1	
C202		VCYD1E102MR	SEMICONDUCTOR 25V 1000P	1	
C203		VCYD1E562MR	SEMICONDUCTOR 25V 5600P	1	
C204		ECEA1HK0R1	ELECTROLYTIC 50V 0.1U	1	
C205		ECEA0JK330	ELECTROLYTIC 6.3V 33U	1	
C207		ECEA0JK470	ELECTROLYTIC 6.3V 47U	1	
C208		ECQV1H334JZ	MYLAR 50V 0.33U	1	
C209		ECQV1H683JZ	MYLAR 50V 0.068	1	
C210		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C211		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C212		ECEA0JK470	ELECTROLYTIC 6.3V 47U	1	
C213		ECEA10Z47	ELECTROLYTIC 10V 47U	1	
C214		ECQB1H182KH	MYLAR 50V 1800P	1	
C215		ECQB1H562JH	MYLAR 50V 5600P	1	
C216		ECQB1H332JH	MYLAR 50V 3300P	1	
C217		ECQV1H124JZ	MYLAR 50V 0.12U	1	
C218		ECQV1H274JZ	MYLAR 50V 0.27U	1	
C219		ECQV1H394JZ	MYLAR 50V 0.39U	1	
C220		ECQV1H184JZ	MYLAR 50V 0.18U	1	
C221		ECKF1H122KB	CERAMIC 50V 1200P	1	
C222		ECQB1H332KH	MYLAR 50V 3300P	1	
C223		ECQB1H272JH	MYLAR 50V 2700P	1	
C225		ECEA1VKN2R2	ELECTROLYTIC 35V 2.2U	1	
C226		ECEA1VKN2R2	ELECTROLYTIC 35V 2.2U	1	
C227		ECEA50ZR22	ELECTROLYTIC 50V 0.22U	1	
C228		VCYD1E123MR	SEMICONDUCTOR 25V 0.012U	1	
C229		ECEA1EK3R3	ELECTROLYTIC 25V 3.3U	1	
C230		ECEA1EK470	ELECTROLYTIC 25V 47U	1	
C231		ECEA1CK470	ELECTROLYTIC 16V 47U	1	
C232		ECQB1H472KH	MYLAR 50V 4700P	1	
C233		ECQB1H682JH	MYLAR 50V 6800P	1	
C234		ECKF1H222KB	CERAMIC 50V 2200P	1	
C235		ECEA1VKN2R2	ELECTROLYTIC 35V 2.2U	1	
C237		ECEA0JK470	ELECTROLYTIC 6.3V 47U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C238		ECQB1H223JH	MYLAR 50V 0.022	1	
C239		ECQB1H562JH	MYLAR 50V 5600P	1	
C240		ECEA1HK0R1	ELECTROLYTIC 50V 0.1U	1	
C241		ECEA0JK470	ELECTROLYTIC 6.3V 47U	1	
C242		ECEA0JK470	ELECTROLYTIC 6.3V 47U	1	
C243		ECEA0JK101	ELECTROLYTIC 6.3V 100U	1	
C244		ECEA1EKN2R2	ELECTROLYTIC 25V 2.2U	1	
C247		VCYD1E103JR	SEMICONDUCTOR 25V 0.01U	1	
C248		ECEA1HK010	ELECTROLYTIC 50V 1U	1	
C249		ECEA1HK010	ELECTROLYTIC 50V 1U	1	
C250		ECKF1H222KB	CERAMIC 50V 2200P	1	
C251		ECQV1H104JZ	MYLAR 50V 0.1U	1	
			COMBINATION CIRCUITS		
			(CAPACITOR & RESISTOR)		
CR201		EXED223M222C	C & R 0.022U 2.2K	1	
CR202		EXED472M104C	C & R 4700P 100K	1	
			CONNECTORS		
P201		VJP1237T	10P	1	
			PACK PINS		
PR201		VJR0189		1	
PR202		VJR0189		1	
PR203		VJR0189		1	
PR204		VJR0190		1	
PR205		VJR0190		1	
	■	VEP03316G	LUMINANCE & CHROMINANCE		
			PACK C.B.A.		
			INTEGRATED CIRCUITS		
IC301		VEFY015	F.I.C	1	
IC302		BA7004	IC	1	
IC801		VEFC013	F.I.C	1	
			TRANSISTORS		
Q301		2SC2206	TRANSISTOR	1	
Q302		2SC2206	TRANSISTOR	1	
Q303		2SB641	TRANSISTOR	1	OR 2SA937M
Q801		2SC2206	TRANSISTOR	1	
Q802		2SD636	TRANSISTOR	1	OR 2SC2021M
Q803		2SD636	TRANSISTOR	1	OR 2SC2021M
Q805		2SD636	TRANSISTOR	1	OR 2SC2021M
Q806		2SC2206	TRANSISTOR	1	
			COMBINATION PARTS		
			(TRANSISTORS & RESISTOR)		
QR301		UN1213	COMBINATION PARTS	1	
			DIODES		
D301		MA165	DIODE	1	OR ISS133, ISS119
D302		MA165	DIODE	1	
D303		MA165	DIODE	1	
D304		MA165	DIODE	1	
D305		MA165	DIODE	1	
D306		MA165	DIODE	1	
D801		MA165	DIODE	1	
			RESISTORS		
R301		ERDS2TJ561	CARBON 1/4W 560	1	
R302		ERDS2TJ561	CARBON 1/4W 560	1	
R303		ERDS2TJ221	CARBON 1/4W 220	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
R304		ERDS2TJ681	CARBON 1/4W 680	1	
R305		ERDS2TJ102	CARBON 1/4W 1K	1	
R306		ERDS2TJ151	CARBON 1/4W 150	1	
R307		ERDS2TJ152	CARBON 1/4W 1.5K	1	
R308		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R309		ERDS2TJ684	CARBON 1/4W 680K	1	
R312		ERDS2TJ103	CARBON 1/4W 10K	1	
R313		ERDS2TJ393	CARBON 1/4W 39K	1	
R314		ERDS2TJ152	CARBON 1/4W 1.5K	1	
R315		ERDS2TJ272	CARBON 1/4W 2.7K	1	
R317		ERDS2TJ152	CARBON 1/4W 1.5K	1	
R318		ERDS2TJ152	CARBON 1/4W 1.5K	1	
R319		ERDS2TJ561	CARBON 1/4W 560	1	
R320		ERDS2TJ392	CARBON 1/4W 3.9K	1	
R321		ERDS2TJ683	CARBON 1/4W 68K	1	
R322		ERDS2TJ394	CARBON 1/4W 390K	1	
R323		ERDS2TJ394	CARBON 1/4W 390K	1	
R324		ERDS2TJ824	CARBON 1/4W 820K	1	
R325		ERDS2TJ102	CARBON 1/4W 1K	1	
R326		ERDS2TJ183	CARBON 1/4W 18K	1	
R327		ERDS2TJ123	CARBON 1/4W 12K	1	
R350		ERDS2TJ102	CARBON 1/4W 1K	1	
R351		ERDS2TJ823	CARBON 1/4W 82K	1	
R801		ERDS2TJ102	CARBON 1/4W 1K	1	
R802		ERDS2TJ101	CARBON 1/4W 100	1	
R805		ERDS2TJ122	CARBON 1/4W 1.2K	1	
R806		ERDS2TJ271	CARBON 1/4W 270	1	
R807		ERDS2TJ272	CARBON 1/4W 2.7K	1	
R811		ERDS2TJ102	CARBON 1/4W 1K	1	
R812		ERDS2TJ471	CARBON 1/4W 470	1	
R813		ERDS2TJ104	CARBON 1/4W 100K	1	
R814		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R815		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R816		ERDS2TJ821	CARBON 1/4W 820	1	
R817		ERDS2TJ472	CARBON 1/4W 4.7K	1	
R818		ERDS2TJ273	CARBON 1/4W 27K	1	
R819		ERDS2TJ470	CARBON 1/4W 47	1	
R820		ERDS2TJ682	CARBON 1/4W 6.8K	1	
R821		ERDS2TJ822	CARBON 1/4W 8.2K	1	
R822		ERDS2TJ182	CARBON 1/4W 1.8K	1	
R823		ERDS2TJ152	CARBON 1/4W 1.5K	1	
R824		ERDS2TJ272	CARBON 1/4W 2.7K	1	
R825		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R828		ERDS2TJ472	CARBON 1/4W 4.7K	1	
R829		ERDS2TJ563	CARBON 1/4W 56K	1	
R830		ERDS2TJ563	CARBON 1/4W 56K	1	
R831		ERDS2TJ102	CARBON 1/4W 1K	1	
R832		ERDS2TJ271	CARBON 1/4W 270	1	
R833		ERDS2TJ471	CARBON 1/4W 470	1	
R834		ERDS2TJ121	CARBON 1/4W 120	1	
			VARIABLE RESISTOR		
VR801		EVMHOGA00B52	500	1	
			CAPACITORS		
C302		ECEA0JU331	ELECTROLYTIC 6.3V 330U	1	
C303		ECEA1AK470	ELECTROLYTIC 10V 47U	1	
C304		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C305		VCKD1H151JA	CERAMIC 50V 150P	1	
C306		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C307		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C309		ECCF1H560JC	CERAMIC 50V 56P	1	
C310		ECKF1H221KB	CERAMIC 50V 220P	1	
C311		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C312		ECEA1HK010	ELECTROLYTIC 50V 1U	1	
C314		ECEA1EK4R7	ELECTROLYTIC 25V 4.7U	1	
C315		ECEA1EKN2R2	ELECTROLYTIC 25V 2.2U	1	
C316		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C317		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C318		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C319		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C320		VCYD1E332KR	SEMICONDUCTOR 25V 3300P	1	
C321		VCYD1E332KR	SEMICONDUCTOR 25V 3300P	1	
C322		VCYD1C104MR1	SEMICONDUCTOR 16V 0.1U	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C323		ECKF1H561KB	CERAMIC 50V 560P	1	
C324		ECCF1H220JC	CERAMIC 50V 22P	1	
C325		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C326		ECEA1HK010	ELECTROLYTIC 50V 1U	1	
C327		ECEA1HKN0R1	ELECTROLYTIC 50V 0.1U	1	
C330		ECCF1H220JC	CERAMIC 50V 22P	1	
C331		ECEA1AK470	ELECTROLYTIC 10V 47U	1	
C802		ECQB1H223JH	MYLAR 50V 0.022	1	
C803		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C804		ECCF1H270JC	CERAMIC 50V 27P	1	
C805		ECKF1H471KB	CERAMIC 50V 470P	1	
C806		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C807		ECEA1HK2R2	ELECTROLYTIC 50V 2.2U	1	
C808		ECEA10Z100	ELECTROLYTIC 10V 100U	1	
C809		ECEA1AK470	ELECTROLYTIC 10V 47U	1	
C810		ECCF1H050CC	CERAMIC 50V 5P	1	
C811		ECKF1H102KB	CERAMIC 50V 1000P	1	
C812		ECEA1AK470	ELECTROLYTIC 10V 47U	1	
C813		ECQV1H154JZ	MYLAR 50V 0.15U	1	
C814		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C815		ECKF1H471KB	CERAMIC 50V 470P	1	
C816		ECEA1CK470	ELECTROLYTIC 16V 47U	1	
C817		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C818		ECQV1H154JZ	MYLAR 50V 0.15U	1	
C820		VCYD1C104MR1	SEMICONDUCTOR 16V 0.1U	1	
C821		VCYD1C104MR1	SEMICONDUCTOR 16V 0.1U	1	
C822		ECQV1H473JZ	MYLAR 50V 0.047	1	
C823		ECQV1H473JZ	MYLAR 50V 0.047	1	
C824		ECEA1HK010	ELECTROLYTIC 50V 1U	1	
C825		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
			COMBINATION CIRCUITS		
			(CAPACITOR & RESISTOR)		
CR801		EXED820K332C	C & R 82P 3.3K	1	
			COILS		
L301		VLQEL05F150K	COIL 15UH	1	
L302		VLQEL05F150K	COIL 15UH	1	
L303		VLQEL05F101K	COIL 100UH	1	
L304		VLQEL05F6R8K	COIL 6.8UH	1	
L306		VLQEL05F820K	COIL 82UH	1	
L307		VLQEL05F101K	COIL 100UH	1	
L308		VLQEL05F101K	COIL 100UH	1	
L309		VLQEL05F101K	COIL 100UH	1	
L310		VLQEL05F101K	COIL 100UH	1	
L801		VLQEL05F150K	COIL 15UH	1	
L802		VLQEL05F470K	COIL 47UH	1	
L803		VLQEL05F270K	COIL 27UH	1	
L804		VLQEL05F151K	COIL 150UH	1	
L805		VLQEL05F101K	COIL 100UH	1	
L806		VLQEL05F470K	COIL 47UH	1	
L807		VLQEL05F681K	COIL 680UH	1	
L808		VLQEL05F681K	COIL 680UH	1	
L809		VLQEL05F331K	COIL 330UH	1	
L810		VLQEL05F101K	COIL 100UH	1	
			DELAY LINE		
DL301		EFDVN645A43D	DELAY LINE	1	
DL801		EFDHR124A13A	DELAY LINE	1	
			FILTERS		
FL301		ELB4M022	FILTER	1	
FL302		VLF0333	FILTER	1	
FL303		ELB4H020	FILTER	1	
FL801		VLF0299	FILTER	1	OR VLF0413
			CONNECTORS		
P301		VJP1232T	5P	1	
P302		VJP1230T	3P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			CRYSTAL OSCILLATOR		
X301		VSX0099		1	OR EF0A500K04D2
X801		VSX0162		1	OR VSX0129
			COMBINATION PARTS		
Z801		VCR0118	(RESISTOR & RESISTOR)	1	OR VCR0135
Z802		VCR0119	(CAPACITOR & RESISTOR)	1	OR VCR0137
Z803		VCR0120	(CAPACITOR & RESISTOR)	1	OR VCR0136
			MISCELLANEOUS		
		VJR0128	PACK PIN 5P	3	
		VJR0164	PACK PIN 10P	1	
	■	VEP03294A	SECAM PACK C.B.A.		
			INTEGRATED CIRCUITS		
IC851		BA7025L	IC	1	
			TRANSISTOR		
Q851		2SC2206	TRANSISTOR	1	(A,B,C)
			COMBINATION PARTS		
			(TRANSISTORS & RESISTOR)		
QR851		UN1212	COMBINATION PARTS	1	OR DTC124EA
QR852		UN1212	COMBINATION PARTS	1	OR DTC124EA
			RESISTORS		
R854		ERDS2TJ472	CARBON 1/4W 4.7K	1	
R855		ERDS2TJ223	CARBON 1/4W 22K	1	
R856		ERDS2TJ390	CARBON 1/4W 39	1	
R857		ERDS2TJ222	CARBON 1/4W 2.2K	1	
R858		ERDS2TJ154	CARBON 1/4W 150K	1	
R859		ERDS2TJ221	CARBON 1/4W 220	1	
R860		ERDS2TJ102	CARBON 1/4W 1K	1	
R861		ERDS2TJ103	CARBON 1/4W 10K	1	
			CAPACITORS		
C851		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C852		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C853		ECEA1CK330	ELECTROLYTIC 16V 33U	1	
C854		ECKF1H681KB	CERAMIC 50V 680P	1	
C855		ECEA1AK470	ELECTROLYTIC 10V 47U	1	
C856		ECEA1CK330	ELECTROLYTIC 16V 33U	1	
C857		ECQV1H563JZ	MYLAR 50V 0.056	1	
C858		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
			COIL		
L851		VLQEL05F101K	COIL 100UH	1	
			TRANSFORMERS		
T851		ELM7Q207A		1	
			FILTER		
FL851		VLF0143		1	
	■	VEP04110	AUDIO PACK C.B.A.		

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			INTEGRATED CIRCUITS		
IC401		UPC1514CA	IC	1	
IC402		UPC1519HA	IC	1	
			TRANSISTORS		
Q401		2SD602A	TRANSISTOR	1	(R)
Q404		2SD1328	TRANSISTOR	1	(Q,R,S)
			RESISTORS		
R401		ERJ6GMYJ153	CHIP 1/16W 15K	1	
R402		ERJ6GMYJ392	CHIP 1/16W 3.9K	1	
R403		ERJ6GMYJ182	CHIP 1/16W 1.8K	1	
R404		ERJ6GMYJ560	CHIP 1/16W 56	1	
R405		ERJ6GMYJ105	CHIP 1/16W 1M	1	
R406		ERJ6GMYJ681	CHIP 1/16W 680	1	
R407		ERJ6GMYJ102	CHIP 1/16W 1K	1	
R408		ERJ6GMYJ124	CHIP 1/16W 120K	1	
R410		ERJ6GMYJ392	CHIP 1/16W 3.9K	1	
R411		ERJ6GMYJ331	CHIP 1/16W 330	1	
R413		ERJ6GMYJ332	CHIP 1/16W 3.3K	1	
R415		ERJ6GMYJ563	CHIP 1/16W 56K	1	
R418		ERJ6GMYJ102	CHIP 1/16W 1K	1	
R419		ERJ6GMYJ392	CHIP 1/16W 3.9K	1	
R420		ERJ6GMYJ561	CHIP 1/16W 560	1	
R422		ERJ6GMYJ562	CHIP 1/16W 5.6K	1	
R425		ERJ6GMYJ332	CHIP 1/16W 3.3K	1	
R426		ERJ6GMYJ102	CHIP 1/16W 1K	1	
			CAPACITORS		
C401		ECEA1HK010	ELECTROLYTIC 50V 1U	1	
C402		ECUX1H102KBN	CHIP 50V 1000P	1	
C403		ECEA1CKL100	ELECTROLYTIC 16V 10U	1	
C404		ECQP1222JZ	MYLAR 100V 2200P	1	
C405		ECEA1AK470	ELECTROLYTIC 10V 47U	1	
C406		ECEA1CK470	ELECTROLYTIC 16V 47U	1	
C407		ECUX1H102KBN	CHIP 50V 1000P	1	
C408		ECEA1CKM100	ELECTROLYTIC 16V 10U	1	
C409		ECEA0JK101	ELECTROLYTIC 6.3V 100U	1	
C410		ECQB1H683JH	MYLAR 50V 0.068	1	
C411		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C412		ECEA1AK330	ELECTROLYTIC 10V 33U	1	
C414		ECEA1HK010	ELECTROLYTIC 50V 1U	1	
C416		ECQB1H223JH	MYLAR 50V 0.022	1	
C417		ECQB1H333JH	MYLAR 50V 0.033	1	
C418		ECEA1CKM100	ELECTROLYTIC 16V 10U	1	
C419		ECEA1AK330	ELECTROLYTIC 10V 33U	1	
C420		ECEA1CK470	ELECTROLYTIC 16V 47U	1	
C421		ECCD2H121K	CERAMIC 500V 120P	1	
C422		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C423		ECQB1H273JH	MYLAR 50V 0.027	1	
C424		ECEA1HK010	ELECTROLYTIC 50V 1U	1	
			COMBINATION CIRCUITS		
			(CAPACITOR & RESISTOR)		
CR401		EXED103Z153C	C & R 0.01U 15K	1	
CR402		EXED102K473C	C & R 1000P 47K	1	
			COILS		
L401		VLQEL05F471K	COIL 470UH	1	
L402		VLQEL07F822J	COIL 8.2mH	1	
			TRANSFORMERS		
T401		EIQ7QF001B	IF TRANSFORMER	1	
			FILTER		
FL401		VLF0332		1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			PACK PINS		
PK401		VJR0131W		1	
PK402		VJR0128W		1	
	■	VEP07312C	TV DEMODULATOR PACK C.B.A.		
			INTEGRATED CIRCUITS		
IC701		BN5115B	IC	1	
IC751		AN5215	IC	1	
IC7651		AN5421	IC	1	
			TRANSISTORS		
Q702		2SB641	TRANSISTOR	1	(Q,R,S,T) OR 2SA564,
					2SA733(Q,R,S),2SB642
					(Q,R,S,T)
Q703		2SD636	TRANSISTOR	1	(S,T) OR 2SD637(S,T)
Q761		2SD636	TRANSISTOR	1	(Q,R,S,T) OR 2SD637
					(Q,R,S,T)
Q7651		2SD636	TRANSISTOR	1	(R, S, T)
			COMBINATION PARTS		
			(TRANSISTORS & RESISTOR)		
QR7651		UN1211	COMBINATION PARTS	1	OR DTC114EA
			DIODES		
D711		MA165	DIODE	1	
D712		MA165	DIODE	1	
D761		MA27WA	DIODE	1	OR MA27WB
			RESISTORS		
R713		ERDS2TJ332	CARBON 1/4W 3.3K	1	
R716		ERDS2TJ392	CARBON 1/4W 3.9K	1	
R721		ERDS2TJ221	CARBON 1/4W 220	1	
R722		ERDS2TJ274	CARBON 1/4W 270K	1	
R731		ERDS2TJ221	CARBON 1/4W 220	1	
R732		ERDS2TJ471	CARBON 1/4W 470	1	
R733		ERDS2TJ102	CARBON 1/4W 1K	1	
R734		ERDS2TJ393	CARBON 1/4W 39K	1	
R735		ERDS2TJ473	CARBON 1/4W 47K	1	
R736		ERDS2TJ272	CARBON 1/4W 2.7K	1	
R741		ERDS2TJ470	CARBON 1/4W 47	1	
R742		EROS2CKG1801	METAL OXIDE 1/4W 1.8K	1	
R743		EROS2CKG1501	METAL OXIDE 1/4W 1.5K	1	
R744		ERDS2TJ103	CARBON 1/4W 10K	1	
R745		ERDS2TJ680	CARBON 1/4W 68	1	
R746		ERDS2TJ151	CARBON 1/4W 150	1	
R747		ERDS2TJ102	CARBON 1/4W 1K	1	
R748		ERDS2TJ470	CARBON 1/4W 47	1	
R751		ERDS2TJ121	CARBON 1/4W 120	1	
R752		ERD2FCG220	CARBON 2W 22	1	<!>
R753		ERDS2TJ331	CARBON 1/4W 330	1	
R762		ERDS2TJ103	CARBON 1/4W 10K	1	
R7651		ERDS2TJ103	CARBON 1/4W 10K	1	
R7652		ERDS2TJ101	CARBON 1/4W 100	1	
R7653		ERDS2TJ471	CARBON 1/4W 470	1	
R7654		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R7655		ERDS2TJ472	CARBON 1/4W 4.7K	1	
R7656		ERDS2TJ151	CARBON 1/4W 150	1	
R7657		ERDS2TJ104	CARBON 1/4W 100K	1	
R7658		ERDS2TJ393	CARBON 1/4W 39K	1	
R7659		ERDS2TJ822	CARBON 1/4W 8.2K	1	
R7661		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R7662		ERDS2TJ393	CARBON 1/4W 39K	1	
R7663		ERDS2TJ222	CARBON 1/4W 2.2K	1	
R7664		ERDS2TJ332	CARBON 1/4W 3.3K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			VARIABLE RESISTORS		
VR701		EVMK3GA00B23	VARIABLE 2K	1	
VR702		EVMK3GA00B23	VARIABLE 2K	1	
VR741		EVNE4AA00B24	VARIABLE 20K	1	
VR751		EVNE4AA00B14	VARIABLE 10K	1	
VR7660		EVMK3GA00B23	VARIABLE 2K	1	
			CAPACITORS		
C711		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C712		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C713		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C714		ECEA1HK010	ELECTROLYTIC 50V 1U	1	
C721		ECCF1H060CC	CERAMIC 50V 6P	1	
C722		ECCF1H030CC	CERAMIC 50V 3P	1	
C723		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C724		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C725		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C726		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C727		ECQV1H224JZ	MYLAR 50V 0.22U	1	
C728		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C730		ECCF1H060CC	CERAMIC 50V 6P	1	
C731		ECCF1H050CC	CERAMIC 50V 5P	1	
C732		ECCF1H030CC	CERAMIC 50V 3P	1	
C733		ECCF1H220JC	CERAMIC 50V 22P	1	
C734		ECCF1H121JP	CERAMIC 50V 120P	1	
C735		ECCF1H150JC	CERAMIC 50V 15P	1	
C736		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C737		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C738		ECCF1H150JC	CERAMIC 50V 15P	1	
C739		ECCF1H560JR	CERAMIC 50V 56P	1	
C740		ECCF1H220JR	CERAMIC 50V 22P	1	
C741		ECCF1H220JC	CERAMIC 50V 22P	1	
C742		ECCF1H390JC	CERAMIC 50V 39P	1	
C751		ECCF1H820JC	CERAMIC 50V 82P	1	
C752		ECCF1H050CC	CERAMIC 50V 5P	1	
C753		ECCF1H820JP	CERAMIC 50V 82P	1	
C754		ECQV1H473JZ	MYLAR 50V 0.047	1	
C755		ECEA1CK470	ELECTROLYTIC 16V 47U	1	
C756		ECCF1H390JR	CERAMIC 50V 39P	1	
C757		ECCF1H120JC	CERAMIC 50V 12P	1	
C758		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C759		ECQV1H104JZ	MYLAR 50V 0.1U	1	
C761		ECCF1H030CC	CERAMIC 50V 3P	1	
C762		ECCF1H270JC	CERAMIC 50V 27P	1	
C763		ECCF1H121JP	CERAMIC 50V 120P	1	
C764		ECCF1H150JP	CERAMIC 50V 15P	1	
C765		ECCF1H151JC	CERAMIC 50V 150P	1	
C766		ECQV1H104JZ	MYLAR 50V 0.1U	1	
C7651		ECEA1CK330	ELECTROLYTIC 16V 33U	1	
C7652		ECEA1CKN330	ELECTROLYTIC 16V 33U	1	
C7653		ECQB1H392JH	MYLAR 50V 3900P	1	
C7654		ECQB1H103JH	MYLAR 50V 0.01U	1	
C7655		ECEA1HK010	ELECTROLYTIC 50V 1U	1	
C7656		ECEA1HK010	ELECTROLYTIC 50V 1U	1	
C7657		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C7658		ECQP1562JZ	MYLAR 560P	1	
C7659		ECQB1H272JH	MYLAR 50V 2700P	1	
			COILS		
L702		VLQEL05F470K	COIL 47UH	1	
L704		VLQEL05F120K	COIL 12UH	1	
L705		VLQEL05F330K	COIL 33UH	1	
L706		VLQEL05F331K	COIL 330UH	1	
L751		VLQEL05F220K	COIL 22UH	1	
L761		VLQEL05F3R3K	COIL 3.3UH	1	
			CRYSTAL OSCILLATORS		
X702		EFCS5R5MS4	CERAMIC FILTER 5.5MHZ	1	OR VLF0178
X703		EFCS5R5MW3	CERAMIC FILTER 5.5MHZ	1	OR VLF0182

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			TRANSFORMERS		
T701		EULHLS310	TRANSFORMER	1	
T702		ELM7A4101Y	IF TRANSFORMER	1	
T703		EIV7E016F	HIGH FREQUENCY COIL	1	
T704		EIV7E016E	HIGH FREQUENCY COIL	1	
T705		ELM7A4101Y		1	
T751		EIS7E006A	IF TRANSFORMER	1	
T752		EIS7E006B	IF TRANSFORMER	1	
			MISCELLANEOUS		
		VJR0162	PACK PIN 8P	2	
		VSC1148	SHIELD CASE	1	(BOTTOM)
		VSC1216	SHIELD CASE	1	(TOP)
		VSC1589	SHIELD CASE	1	(MAIN)
	■	VEP03318A	REC AMP PACK C.B.A.		
			TRANSISTORS		
Q3501		2SC2206	TRANSISTOR	1	(B,C)
Q3502		2SC2206	TRANSISTOR	1	(B,C)
Q3503		2SB641	TRANSISTOR	1	(R,S) OR 2SA937M (R,S)
Q3504		2SB641	TRANSISTOR	1	
Q3601		2SC2206	TRANSISTOR	1	
Q3602		2SB641	TRANSISTOR	1	OR 2SA937M
Q3603		2SB641	TRANSISTOR	1	OR 2SA937M
Q3604		2SD636	TRANSISTOR	1	OR 2SC2021M
Q3605		2SB641	TRANSISTOR	1	OR 2SA937M
			COMBINATION PARTS		
			(TRANSISTORS & RESISTOR)		
QR3601		DTC114EA	COMBINATION PARTS	1	OR UN1211
			DIODES		
D3601		1SS99	DIODE	1	
D3602		1SS99	DIODE	1	
			RESISTORS		
R3501		ERDS2TJ561	CARBON 1/4W 560	1	
R3502		ERDS2TJ682	CARBON 1/4W 6.8K	1	
R3503		ERDS2TJ122	CARBON 1/4W 1.2K	1	
R3504		EROS2CKG1201	METAL OXIDE 1/4W 1.2K	1	
R3505		EROS2CKG5600	METAL OXIDE 1/4W 560	1	
R3506		ERDS2TJ221	CARBON 1/4W 220	1	
R3507		ERDS2TJ682	CARBON 1/4W 6.8K	1	
R3508		ERDS2TJ682	CARBON 1/4W 6.8K	1	
R3509		ERDS2TJ560	CARBON 1/4W 56	1	
R3510		ERDS2TJ560	CARBON 1/4W 56	1	
R3511		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R3512		EROS2CKG4700	METAL OXIDE 1/4W 470	1	
R3601		ERDS2TJ471	CARBON 1/4W 470	1	
R3602		ERDS2TJ471	CARBON 1/4W 470	1	
R3603		ERDS2TJ471	CARBON 1/4W 470	1	
R3604		ERDS2TJ182	CARBON 1/4W 1.8K	1	
R3606		ERDS2TJ102	CARBON 1/4W 1K	1	
R3607		ERDS2TJ560	CARBON 1/4W 56	1	
R3608		ERDS2TJ221	CARBON 1/4W 220	1	
R3609		ERDS2TJ823	CARBON 1/4W 82K	1	
R3610		ERDS2TJ183	CARBON 1/4W 18K	1	
R3611		ERDS2TJ102	CARBON 1/4W 1K	1	
R3612		ERDS2TJ681	CARBON 1/4W 680	1	
R3613		ERDS2TJ151	CARBON 1/4W 150	1	
			VARIABLE RESISTORS		
VR3601		EVLS0AA00B22	200	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			CAPACITORS		
C3501		ECEA1CK470	ELECTROLYTIC 16V 47U	1	
C3502		ECCF1H820KC	CERAMIC 50V 82P	1	
C3503		ECKF1H271KB	CERAMIC 50V 270P	1	
C3504		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C3505		VCYD1C333MR1	SEMICONDUCTOR 16V 0.033U	1	
C3506		ECKF1H471KB	CERAMIC 50V 470P	1	
C3507		ECKF1H472ZF	CERAMIC 50V 4700P	1	
C3508		ECCF1H120KC	CERAMIC 50V 12P	1	
C3509		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C3510		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C3601		ECCF1H121JC	CERAMIC 50V 120P	1	
C3602		ECKF1H271KB	CERAMIC 50V 270P	1	
C3603		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C3604		ECEA1CK470	ELECTROLYTIC 16V 47U	1	
C3605		ECCF1H330JC	CERAMIC 50V 33P	1	
C3606		ECCF1H100DC	CERAMIC 50V 10P	1	
			COILS		
L3501		VLQEL05F101K	COIL 100UH	1	
L3502		VLQEL05F101K	COIL 100UH	1	
L3601		VLQEL05F101K	COIL 100UH	1	
L3602		VLQEL05F390K	COIL 39UH	1	
			CONNECTORS		
P3602		VJP1232T	5P	1	
	■	VEP05082	HEAD AMP PACK C.B.A.		
			INTEGRATED CIRCUITS		
IC501		AN3311S	IC	1	
			TRANSISTORS		
Q501		2SD601	TRANSISTOR	1	(Q,R,S)
Q502		2SD601	TRANSISTOR	1	(Q,R,S)
Q503		2SD601	TRANSISTOR	1	(Q,R,S)
Q504		2SD601	TRANSISTOR	1	(Q,R,S)
Q505		2SC2404	TRANSISTOR	1	(C,D)
			RESISTORS		
R501		ERJ6GMYJ122	CHIP 1/16W 1.2K	1	
R503		ERJ6GMYJ821	CHIP 1/16W 820	1	
R504		ERJ6GMYJ821	CHIP 1/16W 820	1	
R505		ERJ6GMYJ471	CHIP 1/16W 470	1	
R506		ERJ6GMYJ222	CHIP 1/16W 2.2K	1	
R507		ERJ6GMYJ222	CHIP 1/16W 2.2K	1	
R508		ERJ6GMYJ100	CHIP 1/16W 10	1	
R509		ERJ6GMYJ100	CHIP 1/16W 10	1	
R510		ERJ6GMYJ222	CHIP 1/16W 2.2K	1	
R511		ERJ6GMYJ152	CHIP 1/16W 1.5K	1	
R513		ERJ6GMYJ102	CHIP 1/16W 1K	1	
R514		ERJ6GMYJ122	CHIP 1/16W 1.2K	1	
R515		ERJ6GMYJ331	CHIP 1/16W 330	1	
R516		ERJ6GMYJ102	CHIP 1/16W 1K	1	
R551		ERJ6GMYJ222	CHIP 1/16W 2.2K	1	
			CAPACITORS		
C501		VCYD1C104MR1	SEMICONDUCTOR 16V 0.1U	1	
C502		ECUX1H150JCN	CHIP 50V 150P	1	
C503		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C504		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C505		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C506		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C507		ECUX1H150JCN	CHIP 50V 15P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C508		ECUX1H150JCN	CHIP 50V 15P	1	
C509		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C510		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C513		ECUX1H180JCN	CHIP 50V 18P	1	
C514		ECEA0JK470	ELECTROLYTIC 6.3V 47U	1	
C515		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C516		VCYD1C104MR1	SEMICONDUCTOR 16V 0.1U	1	
C519		ECUX1H151JCN	CHIP 50V 150P	1	
C520		ECEA1HK010	ELECTROLYTIC 50V 1U	1	
C521		ECUX1H103ZFN	CHIP 50V 0.01U	1	
C522		VCYD1C104MR1	SEMICONDUCTOR 16V 0.1U	1	
C523		ECEA0JK220	ELECTROLYTIC 6.3V 22U	1	
C524		ECUX1H122KBN	CHIP 50V 1200P	1	
C551		ECUX1H150JCN	CHIP 50V 15P	1	
C552		ECUX1H681KBN	CHIP 50V 680P	1	
			COILS		
L501		VLQEL05F101K	COIL 100UH	1	
L504		VLQEL05F180K	COIL 18UH	1	
L551		VLQ0165		1	
L552		VLQ0165		1	
			CONNECTORS		
P501		VJP1248T	8P	1	
			MISCELLANEOUS		
		VSC1288	SHIELD CASE	1	(TOP)
		VSC1289	SHIELD CASE	1	(MAIN)
		VSC1290	SHIELD CASE	1	(BOTTOM)
	■	VEP06364B	OPERATION C.B.A,		
			INTEGRATED CIRCUITS		
IC6502		UPC1373H	IC	1	OR UPC1373HA
			TRANSISTORS		
Q6501		2SD636	TRANSISTOR	1	
Q6502		2SB641	TRANSISTOR	1	
			DIODES		
D6502		LN31GCPHLG		1	
D6503		LN81RCPHL	LED	1	
D6510		MA165	DIODE	1	
			RESISTORS		
R6501		ERDS2TJ124	CARBON 1/4W 120K	1	
R6502		ERDS2TJ473	CARBON 1/4W 47K	1	
R6503		ERDS2TJ473	CARBON 1/4W 47K	1	
R6504		ERDS2TJ334	CARBON 1/4W 330K	1	
R6505		ERDS2TJ154	CARBON 1/4W 150K	1	
R6506		ERDS2TJ120	CARBON 1/4W 12	1	
R6507		ERDS2TJ102	CARBON 1/4W 1K	1	
R6508		ERDS2TJ682	CARBON 1/4W 6.8K	1	
R6509		ERDS2TJ392	CARBON 1/4W 3.9K	1	
R6510		ERDS2TJ561	CARBON 1/4W 560	1	
R6511		ERDS2TJ122	CARBON 1/4W 1.2K	1	
			VARIABLE RESISTORS		
VR2007		EVUFMAE03B15	VARIABLE 100K	1	
VR2008		EVUFMAE03B15	VARIABLE 100K	1	
VR3004		EVUJ08E03B24	VARIABLE 20K	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			CAPACITORS		
C6501		ECQB1H102JH	MYLAR 50V 1000P	1	
C6502		ECKF1H331KB	CERAMIC 50V 330P	1	
C6503		ECQB1H183KH	MYLAR 50V 0.018P	1	
C6504		VCF0006		1	
C6505		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C6506		ECEA1HKR47	ELECTROLYTIC 50V 0.47U	1	
C6507		ECEA1CK100	ELECTROLYTIC 16V 10U	1	
C6508		ECEA1CK470	ELECTROLYTIC 16V 47U	1	
C6512		ECEA1CK470	ELECTROLYTIC 16V 47U	1	
			COIL		
L6501		VLQEL05F221K	COIL 220UH	1	
			SWITCHES		
S6501		EVQQS307K	SWITCHE	1	
S6502		EVQQS307K	SWITCHE	1	
S6503		EVQQS307K	SWITCHE	1	
S6504		EVQQS307K	SWITCHE	1	
S6505		EVQQS307K	SWITCHE	1	
S6506		EVQQS307K	SWITCHE	1	
S6507		EVQQS307K	SWITCHE	1	
S6508		EVQQS307K	SWITCHE	1	
S6510		EVQQS307K	SWITCHE	1	
S6512		EVQQS307K	SWITCHE	1	
S6515		ESD14314	SWITCHE	1	
			TRANSFORMER		
T6501		EIR7QE007B		1	
			CONNECTORS		
P6501		VJP1247T	7P	1	
P6502		VJP1233T	6P	1	
P6503		VJP1232T	5P	1	
P6504		VJP1234T	7P	1	
P6505		VJP1230T	3P	1	
			MISCELLANEOUS		
		VSC1517	SHIELD CASE	1	(TOP)
		VSC1518	SHIELD CASE	1	(MAIN)
		VSC1519	SHIELD CASE	1	(BOTTOM)
		VSC1520	IR SHIELD PLATE	1	
		KL04	LED SPACER	2	
	■	VEP07337A	TIMER C.B.A.		
			INTEGRATED CIRCUITS		
IC7501		MN15881VDL	IC	1	
IC7504		MN1280P	IC	1	
			COMBINATION PARTS		
			(TRANSISTORS & RESISTOR)		
QR7501		UN1211	COMBINATION PARTS	1	OR DTC114EA
QR7502		UN1211	COMBINATION PARTS	1	OR DTC114EA
			DIODES		
D7501		ERA15-01	DIODE	1	
D7502		MA4082	ZENER	1	
D7505		ERA15-01	DIODE	1	
D7507		MA165	DIODE	1	OR 1SS133,1SS119
D7508		MA165	DIODE	1	OR 1SS133,1SS119
D7509		MA165	DIODE	1	OR 1SS133,1SS119
D7510		MA165	DIODE	1	OR 1SS133,1SS119

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
D7511		MA165	DIODE	1	OR 1SS133,1SS119
D7512		MA165	DIODE	1	OR 1SS133,1SS119
D7513		MA165	DIODE	1	OR 1SS133,1SS119
			RESISTORS		
R7501		ERDS2TJ122	CARBON 1/4W 1.2K	1	
R7502		ERC14GJ126	SOLID 1/4W 12M	1	
R7505		ERDS2TJ470	CARBON 1/4W 47	1	
R7506		ERDS2TJ470	CARBON 1/4W 47	1	
R7507		ERDS2TJ104	CARBON 1/4W 100K	1	
R7512		ERDS2TJ473	CARBON 1/4W 47K	1	
R7513		ERC14GJ225	SOLID 1/4W 2.2M	1	
R7517		ERDS2TJ473	CARBON 1/4W 47K	1	
R7526		ERDS2TJ473	CARBON 1/4W 47K	1	
R7527		ERDS2TJ473	CARBON 1/4W 47K	1	
R7540		ERDS2TJ473	CARBON 1/4W 47K	1	
R7541		ERDS2TJ473	CARBON 1/4W 47K	1	
R7542		ERDS2TJ473	CARBON 1/4W 47K	1	
R7543		ERDS2TJ473	CARBON 1/4W 47K	1	
R7586		ERDS2TJ224	CARBON 1/4W 220K	1	
			CAPACITORS		
C7501		ECCF1H080DC	CERAMIC 50V 8P	1	
C7502		ECRHA030E41	TRIMMER	1	
C7503		ECEA1HKSR22	ELECTROLYTIC 50V 0.22U	1	
C7504		ECCF1H220JC	CERAMIC 50V 22P	1	
C7505		ECCF1H330JC	CERAMIC 50V 33P	1	
C7506		ECEA1AKS470	ELECTROLYTIC 10V 47P	1	
C7507		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C7508		ECQV1H104JZ	MYLAR 50V 0.1U	1	
C7510		ECEA1HKS100	ELECTROLYTIC 50V 10P	1	
			DISPLAY TUBE		
DP7501		VSL0087		1	
			SWITCHES		
SW7501		EVQQS307K	SWITCH	1	
SW7502		EVQQS307K	SWITCH	1	
SW7503		EVQQS307K	SWITCH	1	
SW7504		EVQQS307K	SWITCH	1	
SW7505		EVQQS307K	SWITCH	1	
SW7506		EVQQS307K	SWITCH	1	
SW7507		EVQQS307K	SWITCH	1	
SW7508		EVQQS307K	SWITCH	1	
SW7509		EVQQS307K	SWITCH	1	
SW7510		EVQQS307K	SWITCH	1	
SW7511		EVQQS307K	SWITCH	1	
SW7512		EVQQS307K	SWITCH	1	
SW7513		EVQQS307K	SWITCH	1	
SW7514		EVQQS307K	SWITCH	1	
SW7515		EVQQS307K	SWITCH	1	
SW7516		EVQQS307K	SWITCH	1	
SW7517		EVQQS307K	SWITCH	1	
SW7518		EVQQS307K	SWITCH	1	
SW7519		EVQQS307K	SWITCH	1	
SW7521		ESD14314	SWITCH	1	
SW7536		ESD14314	SWITCH	1	
			CRYSTAL OSCILLATORS		
X7501		VSX0140		1	
X7502		VSX0094		1	
			CONNECTORS		
P7501		VJS1837	11P	1	
P7502		VJS1837	11P	1	
P7503		VJP1246T	6P	1	
P7508		VJS1690	20P	1	
P7509		VJS1690	20P	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			MISCELLANEOUS		
		VJF0351	HOLDER	1	
	■	VEP07336C	TIMER SUB C.B.A.		
			INTEGRATED CIRCUITS		
IC7502		MN1220	IC	1	
IC7503		MN1514VDM	IC	1	
IC7505		AN6913	IC	1	
IC7506		MN4066B	IC	1	
			TRANSISTORS		
Q7501		2SD637	TRANSISTOR	1	
Q7502		2SD637	TRANSISTOR	1	
			COMBINATION PARTS		
			(TRANSISTORS & RESISTOR)		
QR7503		UN1112	COMBINATION PARTS	1	OR DTA124EA
QR7504		UN1211	COMBINATION PARTS	1	OR DTC114EA
QR7505		UN1213	COMBINATION PARTS	1	OR DTC144EA
			DIODES		
D7517		MA165	DIODE	1	
			RESISTORS		
R7503		ERDS2TJ105	CARBON 1/4W 1000K	1	
R7508		ERDS2TJ470	CARBON 1/4W 47	1	
R7509		ERDS2TJ102	CARBON 1/4W 1K	1	
R7510		ERDS2TJ223	CARBON 1/4W 22K	1	
R7530		ERDS2TJ123	CARBON 1/4W 12K	1	
R7531		ERDS2TJ682	CARBON 1/4W 6.8K	1	
R7532		ERDS2TJ153	CARBON 1/4W 15K	1	
R7533		ERDS2TJ473	CARBON 1/4W 47K	1	
R7534		ERDS2TJ473	CARBON 1/4W 47K	1	
R7535		ERDS2TJ393	CARBON 1/4W 39K	1	
R7536		ERDS2TJ473	CARBON 1/4W 47K	1	
R7537		ERDS2TJ102	CARBON 1/4W 1K	1	
			CAPACITORS		
C7520		ECEA1AKS220	ELECTROLYTIC 10C 22U	1	
C7521		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
C7522		ECEA1HKSR22	ELECTROLYTIC 50V 0.22U	1	
C7523		ECCF1H470JC	CERAMIC 50V 47P	1	
C7524		ECCF1H470JC	CERAMIC 50V 47P	1	
C7525		ECEA1CKS100	ELECTROLYTIC 16V 10U	1	
			COILS		
L7501		VLQEL05F1R0K	COIL 1UH	1	
			CONNECTORS		
P7505		VJP1248T	8P	1	
P7510		VJS1690	20P	1	
P7511		VJS1690	20P	1	
			CRYSTAL OSCILLATOR		
X7503		VSX0082		1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
	■	VEP06365A	V.P.S C.B.A.		
			INTEGRATED CIRCUITS		
IC7801		SAA5235	IC	1	
IC7802		SAF1135P	IC	1	
			TRANSISTORS		
Q7801		2SD636	TRANSISTOR	1	
Q7802		2SB641	TRANSISTOR	1	
Q7803		2SB641	TRANSISTOR	1	
			RESISTORS		
R7803		ERDS2TJ103	CARBON 1/4W 10K	1	
R7804		ERDS2TJ103	CARBON 1/4W 10K	1	
R7807		ERDS2TJ101	CARBON 1/4W 100	1	
R7808		ERDS2TJ101	CARBON 1/4W 100	1	
R7809		ERDS2TJ683	CARBON 1/4W 68K	1	
R7810		ERDS2TJ223	CARBON 1/4W 22K	1	
R7811		ERDS2TJ332	CARBON 1/4W 3.3K	1	
R7812		ERDS2TJ152	CARBON 1/4W 1.5K	1	
R7813		ERDS2TJ102	CARBON 1/4W 1K	1	
R7814		ERDS2TJ102	CARBON 1/4W 1K	1	
R7815		ERDS2TJ102	CARBON 1/4W 1K	1	
R7816		ERDS2TJ472	CARBON 1/4W 4.7K	1	
			CAPACITORS		
C7801		ECEA1CK220	ELECTROLYTIC 16V 22U	1	
C7802		ECQB1H223JH	MYLAR 50V 0.022	1	
C7803		ECQV1H683JZ	MYLAR 50V 0.068	1	
C7804		ECEA1HKNR47	ELECTROLYTIC 50V 0.47U	1	
C7805		ECCF1H150JC	CERAMIC 50V 15P	1	
C7806		ECQB1H102JH	MYLAR 50V 1000P	1	
C7807		ECKF1H471KB	CERAMIC 50V 470P	1	
C7808		ECQB1H223JH	MYLAR 50V 0.022	1	
C7809		ECKF1H271KB	CERAMIC 50V 270P	1	
C7810		ECCF1H101JC	CERAMIC 50V 100P	1	
C7811		ECCF1H180JC	CERAMIC 50V 18P	1	
C7812		ECCF1H820JC	CERAMIC 50V 82P	1	
C7814		ECKF1H102KB	CERAMIC 50V 1000P	1	
C7815		ECQB1H223JH	MYLAR 50V 0.022	1	
C7816		ECEA1EK4R7	ELECTROLYTIC 25V 4.7U	1	
C7818		ECEA1CKN100	ELECTROLYTIC 16V 10U	1	
C7819		ECCF1H101JC	CERAMIC 50V 100P	1	
C7820		ECCF1H101JC	CERAMIC 50V 100P	1	
			COILS		
L7801		VLQ0193		1	
L7802		VLQEL05F101K	COIL 100UH	1	
L7803		VLQEL05F101K	COIL 100UH	1	
			CONNECTORS		
P7801		VJP1234T	7P	1	
			CRYSTAL OSCILLATOR		
X7801		VSX0173		1	
	■	VEP03387A	INPUT SELECT C.B.A.		
			INTEGRATED CIRCUITS		
IC3101		TA7347P	IC	1	
IC3102		M5201L	IC	1	

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			TRANSISTORS		
Q3101		2SB641	TRANSISTOR	1	(Q,R,S) OR 2SA937M
Q3102		2SD636	TRANSISTOR	1	OR 2SC2021M
			COMBINATION PARTS		
			(TRANSISTORS & RESISTOR)		
QR3101		UN1213	COMBINATION PARTS	1	OR DTC144EA
QR3102		UN1213	COMBINATION PARTS	1	OR DTC144EA
QR3103		UN1213	COMBINATION PARTS	1	OR DTC144EA
			DIODES		
D3101		MA165	DIODE	1	OR 1SS133,1SS119
D3102		MA165	DIODE	1	OR 1SS133,1SS119
			RESISTORS		
R3101		ERDS2TJ104	CARBON 1/4W 100K	1	
R3102		ERDS2TJ103	CARBON 1/4W 10K	1	
R3103		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R3104		ERG1ANJ820	METAL OXIDE 1W 82	1	
R3105		ERDS2TJ750	CARBON 1/4W 75	1	
R3106		ERDS2TJ103	CARBON 1/4W 10K	1	
R3107		ERDS2TJ473	CARBON 1/4W 47K	1	
R3108		ERDS2TJ473	CARBON 1/4W 47K	1	
R3109		ERDS2TJ393	CARBON 1/4W 39K	1	
R3110		ERDS2TJ682	CARBON 1/4W 6.8K	1	
R3111		ERDS2TJ124	CARBON 1/4W 120K	1	
R3112		ERDS2TJ124	CARBON 1/4W 120K	1	
R3113		ERDS2TJ473	CARBON 1/4W 47K	1	
R3114		ERDS2TJ473	CARBON 1/4W 47K	1	
R3115		ERDS2TJ103	CARBON 1/4W 10K	1	
R3116		ERDS2TJ223	CARBON 1/4W 22K	1	
R3117		ERDS2TJ750	CARBON 1/4W 75	1	
R3119		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R3120		ERDS2TJ223	CARBON 1/4W 22K	1	
R3121		ERDS2TJ222	CARBON 1/4W 2.2K	1	
R3122		ERDS2TJ242	CARBON 1/4W 2.4K	1	
R3123		ERDS2TJ242	CARBON 1/4W 2.4K	1	
R3124		ERDS2TJ471	CARBON 1/4W 470	1	
			CAPACITORS		
C3101		ECEA1CK470	ELECTROLYTIC 16V 47U	1	
C3102		ECEA1CKN220	ELECTROLYTIC 16V 22U	1	
C3103		ECEA1CK220	ELECTROLYTIC 16V 22U	1	
C3104		ECEA1HK2R2	ELECTROLYTIC 50V 2.2U	1	
C3105		ECEA1CK470	ELECTROLYTIC 16V 47U	1	
C3106		ECEA1CK470	ELECTROLYTIC 16V 47U	1	
C3107		ECQB1H222JH	MYLAR 50V 2200P	1	
C3108		ECEA1CU470	ELECTROLYTIC 16V 47U	1	
C3109		ECEA1HK2R2	ELECTROLYTIC 50V 2.2U	1	
C3110		ECEA1HK3R3	ELECTROLYTIC 50V 3.3U	1	
C3111		ECEA1HK2R2	ELECTROLYTIC 50V 2.2U	1	
C3112		ECEA1CU330	ELECTROLYTIC 16V 33U	1	
C3113		ECQB1H682JH	MYLAR 50V 6800P	1	
C3115		ECKF1H102KB	CERAMIC 50V 1000P	1	
C3116		ECQB1H183JH	MYLAR 50V 0.018	1	
C3117		VCYD1C104MR1	SEMICONDUCTOR 16V 0.1U	1	
C3119		ECCF1H470JC	CERAMIC 50V 47P	1	
C3120		ECCF1H470JC	CERAMIC 50V 47P	1	
C3121		ECKF1H103ZF	CERAMIC 50V 0.01U	1	
			CONNECTORS		
P3101		VJP1252T	12P	1	
			MISCELLANEOUS		
		VMP1013	EARTH ANGLE	1	
	■	ENC87786	RF CONVERTER & ANTENNA		<!>
			BOOSTER UNIT		

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			INTEGRATED CIRCUIT		
IC1		LA7051	IC	1	
			TRANSISTORS		
Q1		2SC3130	TRANSISTOR	1	
Q2		2SC2570A	TRANSISTOR	1	OR 2SC3355
Q3		2SC2570A	TRANSISTOR	1	OR 2SC3355
			DIODES		
D1		MA1075	ZENER	1	
D2		1SS86	DIODE	1	OR 1SS174,1SS87
D3		1SS86	DIODE	1	OR 1SS174,1SS87
D4		MA161	DIODE	1	OR MA166,1SS135
D5		MA161	DIODE	1	OR MA166,1SS135
			NOTE:		
			THE OTHER PARTS FOR		
			RF CONVERTER & ANTENNA-		
			BOOSTER UNIT ARE POT		
			AVAILABLE AS SPARE PARTS.		
	■	VJB00H04	IR RECEIVER C.B.		
			DIODE		
D6501		PN313	DIODE	1	OR PH302
	■	VJB00G13	SUPPLY PHOTO Tr. C.B.		
			CAPACITOR		
C1502		ECKF1H102KB	CERAMIC 50V 1000P	1	
			MISCELLANEOUS		
		VMD0645	PHOTO HOLDER	1	
	■	VJB00G23	LED C.B.		
			DIODE		
D1501		GL450	PHOTO DIODE	1	OR LN59
			MISCELLANEOUS		
		VMD0644	LED HOLDER	1	
	■	VJB00G10	MECHANISM CONNECTION C.B.		
			RESISTOR		
R1510		ERDS2TJ561	CARBON 1/4W 560	1	
			CAPACITOR		

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
C1510		ECEA50Z3R3	ELECTROLYTIC 50V 3.3U	1	
			CONNECTORS		
P1511		VJP1545T	5P	1	
P1514		VJP1229T	2P	1	
P1515		VJP1229R	2P	1	
P1516		VJP1230T	3P	1	
	■	VJB00G15	CYLINDER HEATER C.B.		
			TRANSISTOR		
Q1501		2SD1275	TRANSISTOR	1	
	■	VJB00G09	FRONT LOADING C.B.		
			TRANSISTOR		
Q1503		PN150NV	TRANSISTOR	1	
			CAPACITOR		
C1503		ECKF1H102KB	CERAMIC 50V 1000P	1	
			MISCELLANEOUS		
		VMD0645	PHOTO HOLDER	1	
	■	VJB00G12	REEL SENSOR C.B.		
			PHOTO INTERRUPTER		
IC1501		ON2170		1	
			CONNECTOR		
P1518		VJP1229T	2P	1	
	■	VEP01213B	POWER TRANSFORMER C.B.A.		<!>
			TRANSISTORS		
Q1101		2SA684	TRANSISTOR	1	
Q1102		2SD1275	TRANSISTOR	1	
			DIODES		
D1101		MA4130M	ZENER	1	
D1102		10E1	DIODE	1	<!>
D1103		11E2	DIODE	1	
D1104		11E2	DIODE	1	
D1105		MA4300L	ZENER	1	
			RESISTORS		
R1101		ERDS2TJ562	CARBON 1/4W 5.6K	1	
R1102		ERDS2TJ152	CARBON 1/4W 1.5K	1	
R1103		ERD2FCJ8R2	CARBON 2W 8.2	1	<!>

Ref.No.		Part No.	Part Name & Description	Pcs	Remarks
			CAPACITORS		
C1101		ECEA1CK100	ELECTROLYTIC 16V 10	1	
C1102		ECEA1VU332	ELECTROLYTIC 35V 3.3K	1	
C1103		ECEA2AU470	ELECTROLYTIC 100V 47	1	
C1104		ECEA2AU470	ELECTROLYTIC 100V 47	1	
C1105		ECKF1H223ZF	CERAMIC 50V 0.022P	1	
C1106		ECKF1H223ZF	CERAMIC 50V 0.022P	1	
C1107		ECKF1H223ZF	CERAMIC 50V 0.022P	1	
			COILS		
L1101		VTQ0046		1	
L1102		VTQ0047		1	
			CONNECTORS		
P1101		VJP1250T	10P	1	
P1102		VJP1148	2P	1	
			MISCELLANEOUS		
		VSC1446	HEAT SINK	1	FOR Q1101
		SJT777	AC CORD CLAMPER	2	<!>
		TJC6320	FUSE HOLDER	6	<!>
		VMP0856	EARTH ANGLE	1	
	■	VEP22044A	IR REMOTE CONTROLLER C.B.A.		
			INTEGRATED CIRCUIT		
IC1		MN6013C	IC	1	
			TRANSISTOR		
Q1		UN1231	TRANSISTOR	1	
			DIODE		
D1		LN66S	LED	1	OR SE303AY
			RESISTOR		
R1		ERDS2TJ1R0	CARBON 1/4W 1	1	
			CAPACITORS		
C1		ECKF1H471KB	CERAMIC 50V 470P	1	
C2		ECKF1H121KB	CERAMIC 50V 120P	1	
C3		ECEA0JK101	ELECTROLYTIC 6.3V 100U	1	OR ECEA0JKS101
			CRYSTAL OSCILLATOR		
X1		CSB420PB1		1	OR EF0A420K05F1
			MISCELLANEOUS		
		VJR0099	ELECTRODE (+)	1	
		VJR0100	ELECTRODE (-)	1	